



iSeries

Setting Up Your  
0588, 0595, 5088, 5094, 5095 or 5294  
Expansion Unit

*Version 5 Release 3*

SA41-5017-02







@server

iSeries

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0588, 0595, 5088, 5094, 5095 or 5294  
Expansion Unit

*Version 5 Release 3*

SA41-5017-02

**Note**

Before using this information and the product it supports, be sure to read the information in "Safety and Environmental Notices" on page v and "Notices" on page 51.

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## Safety and Environmental Notices

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### Data Integrity and Verification

IBM® computer systems contain mechanisms designed to reduce the possibility of undetected data corruption or loss. This risk, however, cannot be eliminated. Users who experience unplanned outages, system failures, power fluctuations or outages, or component failures must verify the accuracy of operations performed and data saved or transmitted by the system at or near the time of the outage or failure. In addition, users must establish procedures to ensure that there is independent data verification before relying on such data in sensitive or critical operations. Users should periodically check the IBM support websites for updated information and fixes applicable to the system and related software.

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### Danger Notices

A danger notice calls attention to a situation that is potentially lethal or extremely hazardous to people.

#### DANGER

An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)

#### DANGER

To prevent a possible electrical shock when installing the system, ensure that the power cords for all devices are unplugged before installing signal cables. (RSFTD202)

#### DANGER

To prevent a possible electrical shock when adding or removing any devices to or from the system, ensure that the power cords for those devices are unplugged before the signal cables are connected or disconnected. If possible, disconnect all power cords from the existing system before you add or remove a device. (RSFTD203)

#### DANGER

To prevent a possible electrical shock during an electrical storm, do not connect or disconnect cables or station protectors for communications lines, display stations, printers, or telephones. (RSFTD003)

## DANGER

To prevent a possible electrical shock from touching two surfaces with different electrical grounds, use one hand, when possible, to connect or disconnect signal cables. (RSFTD004)

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## Caution Notices

A caution notice calls attention to a situation that is potentially hazardous to people because of some existing condition.

### CAUTION:

**Telecommunications Statement:** This unit contains over-voltage circuits between the ac power outlet and the unit. These circuits meet the standard limits described in International Electrical Commission (IEC) 664, installation category II. It is the customer's responsibility to ensure that the power outlet meets the standards of IEC 664, installation category II. (RSFTC214)

### Laser Compliance

All Lasers are certified in the U.S. to conform to the requirements of DHHS 21 CFR Subchapter J for class 1 laser products. Outside the U.S., they are certified to be in compliance with the IEC 825 (first edition 1984) and as a class 1 laser product. Consult the label on each part for laser certification numbers and approval information.

## Laser Safety Information

### CAUTION:

This product may contain a CD-ROM which is a class 1 laser product. (RSFTC240)

### CAUTION:

All IBM laser modules are designed so that there is never any human access to laser radiation above a class 1 level during normal operation, user maintenance, or prescribed service conditions. Data processing environments can contain equipment transmitting on system links with laser modules that operate at greater than class 1 power levels. For this reason, never look into the end of an optical fiber cable or open receptacle. Only trained service personnel should perform the inspection or repair of optical fiber cable assemblies and receptacles. (RSFTC243)

## Product Recycling and Disposal

Components of the system, such as structural parts and circuit cards, can be recycled where recycling facilities exist. IBM does not currently collect and recycle used IBM products from customers in the United States other than those products that are involved in trade-in programs. Companies are available to disassemble, reutilize, recycle, or dispose of electronic products. Contact an IBM account representative for more information.

The system unit contains batteries and circuit boards with lead solder. Before you dispose of this unit, these batteries and circuit boards must be removed and discarded according to local regulations or recycled where facilities exist. This book contains specific information on each battery type where applicable.

## Battery Return Program

In the United States, IBM has established a collection process for reuse, recycling, or proper disposal of used IBM batteries and battery packs. For information on proper disposal of the batteries in this unit, please contact IBM at 1-800-426-4333. Please have the IBM part number that is listed on the battery available when you make your call. For information on battery disposal outside the United States, contact your local waste disposal facility.



## **Environmental Design**

The environmental efforts that have gone into the design of the system signify IBM's commitment to improve the quality of its products and processes. Some of these accomplishments include the elimination of the use of Class I ozone-depleting chemicals in the manufacturing process, reductions in manufacturing wastes, and increased product energy efficiency. For more information, contact an IBM account representative.



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## About Setting Up Your 0588, 0595, 5088, 5094, 5095 or 5294 Expansion Unit (SA41–5017)

This book contains installation about setting up your expansion unit. You may elect to set up your new expansion unit yourself. It will take approximately one to three hours to install the hardware.

You also may elect not to install the expansion unit yourself. You may contact IBM or an authorized dealer to make arrangements for them to install it for a fee.

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### Who should read this book

You should be familiar with the system, display, and keyboards. You should also know how to power down the system and perform a system initial program load. You should also know how to power down system peripherals such as printers, monitors, and PCs.

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### Prerequisite and related information

Use the iSeries Information Center as your starting point for looking up technical information.

You can access the Information Center two ways:

- From the following Web site:  
<http://www.ibm.com/eserver/series/infocenter>
- From the *iSeries Information Center*, SK3T-4091-04 CD-ROM. This CD-ROM ships with your new iSeries hardware or IBM Operating System/400 software upgrade order. You can also order the CD-ROM from the IBM Publications Center:  
<http://www.ibm.com/shop/publications/order>

The iSeries Information Center contains new and updated iSeries information such as software and hardware installation, Linux, WebSphere<sup>®</sup>, Java<sup>™</sup>, high availability, database, logical partitions, CL commands, and system application programming interfaces (APIs). In addition, it provides advisors and finders to assist in planning, troubleshooting, and configuring your iSeries hardware and software.

With every new hardware order, you receive the *iSeries Setup and Operations CD-ROM*, SK3T-4098-02. This CD-ROM contains IBM @server IBM e(logo)server iSeries Access for Windows and the EZ-Setup wizard. iSeries Access Family offers a powerful set of client and server capabilities for connecting PCs to iSeries<sup>™</sup> servers. The EZ-Setup wizard automates many of the iSeries setup tasks.

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### How to send your comments

Your feedback is important in helping to provide the most accurate and high-quality information. If you have any comments about this book or any other iSeries documentation, fill out the readers' comment form at the back of this book.

- If you prefer to send comments by mail, use the readers' comment form with the address that is printed on the back. If you are mailing a readers' comment form from a country or region other than the United States, you can give the form to the local IBM branch office or IBM representative for postage-paid mailing.
- If you prefer to send comments by FAX, use either of the following numbers:
  - United States, Canada, and Puerto Rico: 1-800-937-3430
  - Other countries or regions: 1-507-253-5192
- If you prefer to send comments electronically, use one of these e-mail addresses:

- Comments on books:  
RCHCLERK@us.ibm.com
- Comments on the iSeries Information Center:  
RCHINFOC@us.ibm.com

Be sure to include the following:

- The name of the book or iSeries Information Center topic.
- The publication number of a book.
- The page number or topic of a book to which your comment applies.

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## Chapter 1. Prepare to set up your expansion unit

Are you installing 0595 in a rack?

- **No:** Continue with these instructions.
- **Yes:** Go to Chapter 5, "Install 0595 expansion unit in a rack," on page 23. Then return here and continue with the set up.

This chapter explains what you need to do before you set up your expansion unit. This includes the following tasks:

1. Unpack your expansion unit (refer to the instructions for unpacking that came with your expansion unit).
2. Plan layouts for your cables.
3. Power down your system unit. All system units in a cluster must be powered down.

Before you begin the installation process, carefully plan where you will install your new expansion unit. You should consider several factors that include size, security, and environmental factors. Before you set up your new expansion unit, refer to the *iSeries Information Center* Web site

<http://www.ibm.com/eserver/iseries/infocenter>

and select Planning

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### Hardware requirements

If you are installing your new expansion unit directly to your system unit, you should remember these rules:

- You need to have an available or unused high speed link (HSL) connector.
- You need to have an unused or available system power control network (SPCN) connector.

---

### Identify HSL and SPCN cables

Use the following tables to identify your High Speed link (HSL) and System Power Control Network (SPCN) cables. Your system uses HSL cables to communicate with your expansion unit. Your system uses SPCN cables to control power to your expansion unit.

Depending on your requirements, you might not have every HSL or SPCN cable listed below.

*Table 1. HSL Cables*

Feature Number	CCIN Number	Cable Type	Length	Part Number
1460 (copper)	0343	HSL	3 Meters	44L0005
1461 (copper)	0361	HSL	6 Meters	97H7490
1462 (copper)	0368	HSL	15 Meters	97H7491
1470 (fiber optic)	1470	Optical	6 Meters	21P5014
1471 (fiber optic)	1471	Optical	30 Meters	21P5015
1472 (fiber optic)	1472	Optical	100 Meters	21P5016
1473 (fiber optic)	1473	Optical	250 Meters	21P6326
1474 (copper)	1474	HSL to HSL-2	6 Meters	21P5477
1475 (copper)	1475	HSL to HSL-2	10 Meters	21P5458

Table 1. HSL Cables (continued)

Feature Number	CCIN Number	Cable Type	Length	Part Number
1482 (copper)	1482	HSL-2	3.5 Meters	53P2676
1483 (copper)	1483	HSL-2	10 Meters	21P5456
1485 (copper)	1485	HSL-2	15 Meters	21P5457

Table 2. SPCN Cables

Feature Number	CCIN number	Length	Part Number
1463	9206	2 Meters	87G6235
1464	9219	6 Meters	21F9469
1465	9213	15 Meters	21F9358
1466	9214	30 Meters	21F9359
0369 (fiber optic)	0369	100 Meters	21F9415
1468 (fiber optic)	1468	250 Meters	21P6325

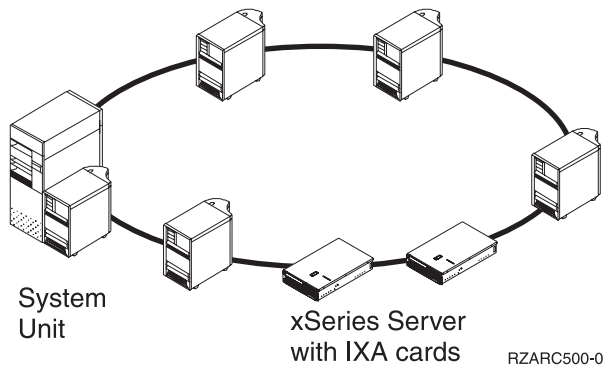
## Plan your cable layout

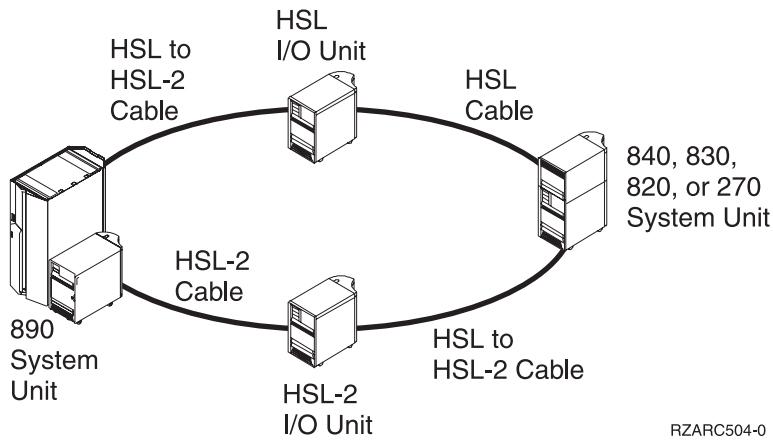
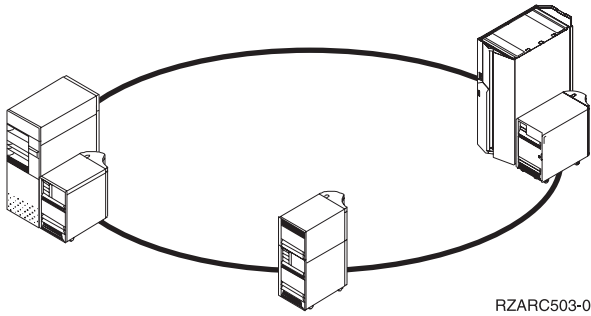
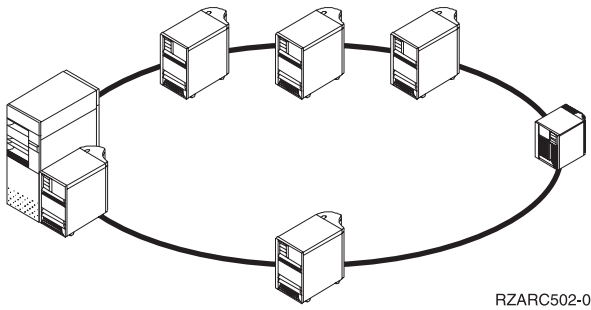
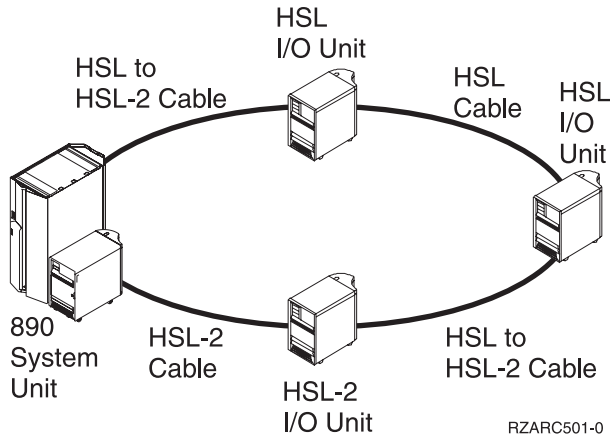
When you decide where to place your cables, follow your site plan and keep the following things in mind:

- Refer to <http://www.ibm.com/eserver/series/infocenter> and select Hardware installation and use→Cabling your server
- You can also refer to “System unit cable options” on page 5, “Expansion unit cable options” on page 5 and “Maximum HSL loops” on page 6.
- Avoid creating a safety hazard.
- Avoid damaging the cables.
- Avoid placing cables parallel to high-voltage lines.

## Examples of HSL loops

The following diagrams show different examples of HSL loops:





## Redundant links

A *redundant link* is a secondary HSL connection that your system uses if the primary link experiences a failure. Create a redundant link configuration by connecting a redundant HSL cable link between the expansion units and the system unit.

Your new expansion unit may have disk units. To ensure continued access to your disk units in the event of a link failure, a redundant link should be planned for your cable layout.

Refer to Figure 1 to see how to plan your cables with a redundant link configuration with one expansion unit. If you are linking two expansion units, refer to Figure 2. If you are setting up stacked expansion units, refer to Figure 3 on page 5.

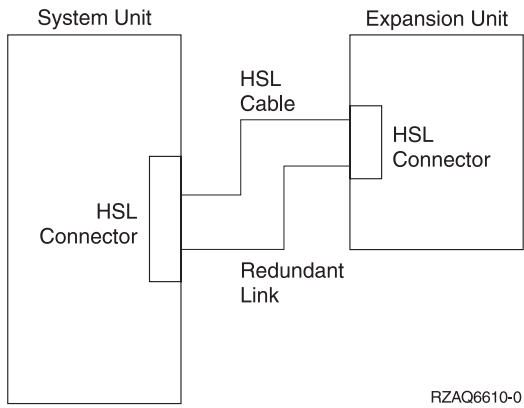


Figure 1. Planning for redundant link one expansion unit

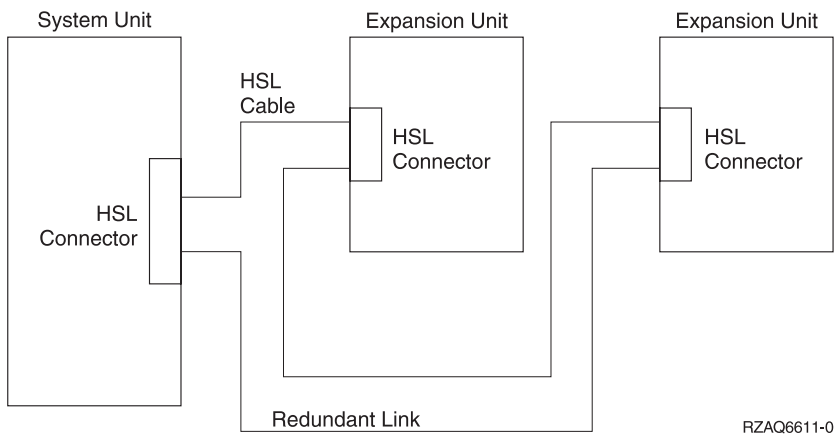


Figure 2. Planning for redundant link with two expansion units



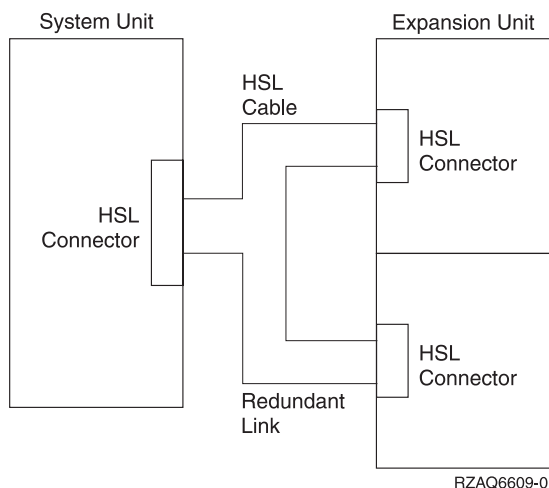


Figure 3. Planning for redundant link with stacked expansion units (5079)

## System unit cable options

Use the following table to identify the HSL cables for the system units identified:

Table 3. System unit cable options

Cable feature number	270	800 or 810	820	825	830	840	870, 890
1460 (copper)	x	x	x		x	x	
1461 (copper)	x	x	x		x	x	
1462 (copper)			x <sup>1</sup>		x	x	
1470 (fiber optic)				x	x	x	x
1471 (fiber optic)				x	x	x	x
1472 (fiber optic)				x	x	x	x
1473 (fiber optic)				x	x	x	x
1474 (copper)	x	x	x	x	x	x	x
1475 (copper)			x	x	x	x	x
1482 (copper)				x			x
1483 (copper)				x			x
1485 (copper)				x			x
<sup>1</sup> A0 connector only.							

## Expansion unit cable options

Use the following table to identify the HSL cables for the expansion units identified:

Table 4. Expansion unit cable options

Cable feature number	5074	5075	5078, 0578	5079, 8079	IXA card	5088, 0588	5094, 0694, 9094	5095, 0595	5294, 8093, 8094
1460 (copper)	x	x	x	x	x				
1461 (copper)	x	x	x	x	x				

Table 4. Expansion unit cable options (continued)

Cable feature number	5074	5075	5078, 0578	5079, 8079	IXA card	5088, 0588	5094, 0694, 9094	5095, 0595	5294, 8093, 8094
1462 (copper)	x	x	x	x	x				
1470 (fiber optic)	x		x	x		x	x	x	x
1471 (fiber optic)	x		x	x		x	x	x	x
1472 (fiber optic)	x		x	x		x	x	x	x
1473 (fiber optic)	x		x	x		x	x	x	x
1474 (copper)	x	x	x	x	x	x	x	x	x
1475 (copper)	x	x	x	x	x	x	x	x	x
1482 (copper)						x	x	x	x
1483 (copper)						x	x	x	x
1485 (copper)						x	x	x	x

## Configuration rules

When you set up your expansion unit, observe these rules.

### Maximum HSL loops

Use the following tables to identify the maximum loops allowed.

Table 5. Maximum system loops

HSL loop maximums	270	800	810	820	825	830	840	870	890
I/O units	1	1	4	5	18	13	23	47	47
Fiber optic loops	0	0	0	0	2	1	2	6	12
HSL loops	1	1	1	1	3	4	8	8	14
IXA cards in xSeries®	2	3	7	8	18	16	32	60	60
I/O units and IXA cards	3	4	8	9	27	21	39	60	60
HSL Opticonnect loops	1	1	1	1	2	2	4	8	14
HSL migration unit	0	0	0	1	0	1	1	0	0

Table 6. Maximum HSL loops

HSL loop maximums	270	800	810	820	825	830	840	870	890
I/O units	1	1	4	5	6	6	6	6	6
IXA cards	2	3	7	8	8	8	8	8	8
I/O units and IXA cards	3	4	8	9	9	9	9	9	9

Table 7. Maximum HSL Opticonnect loop with two systems

HSL Opticonnect loop with two systems	270	800	810	820	825	830	840	870	890
I/O units and IXA cards	4	4	4	4	4	4	4	4	4

All systems participating in a three system loop must be at V5R2. Models 830, 840, 870 and 890 support three system HSL OptiConnect Loops.

Table 8. Maximum HSL Opticonnect loop with three systems

HSL Opticonnect loop with three systems	270	800	810	820	825	830	840	870	890
I/O units and IXA cards	N/A	N/A	N/A	N/A	N/A	0	0	0	0

## HSL loop addressing

Table 9. HSL loop addressing

Addressing	270	800 or 810	820	825	830	840	870	890
HSL loops	A	A	A	A	A, B, C, D	A,B, C,D, E,F, G,H	M41 C,D M40 A,B M30 C,D M39 A,B	M41 C,D M40 A,B,C,D M30 A,B,C,D M39 A,B,C,D
Fiber Optic HSL loops	N/A	N/A	N/A	N/A	D	D E	M40 A,B M30 C,D M39 A,B	M40 A,B,C,D M30 AB,C,D M39 A,B,C,D
HSL Opticonnect loops	A	A	A	A	B C or D	B C or D E or F G or H	M41 C,D M40 A,B M30 C,D M39 A,B	M41 A, B M40 A,B,C,D M30 A,B,C,D M39 A,B,C,D

## Power down your iSeries system unit

You need to power down your system unit before you can connect your new expansion unit to it. All system units in a cluster must be powered down. Follow the steps below to power down your system unit.

- \_\_\_ 1. Ensure that you have a current backup of your operating system and licensed programs. If you have backed up the operating system and licensed programs since the last time you applied program temporary fixes (PTFs), that backup is acceptable.
- \_\_\_ 2. If you have installed logical partitions on your system unit, refer to *Logical partitions* in the *iSeries Information Center*. In the *iSeries Information Center* you can find instructions on powering down a system with logical partitions.
- \_\_\_ 3. If an IXA is present on the system, shut it down using the OS/400® options.
- \_\_\_ 4. Ensure that all jobs are complete.
- \_\_\_ 5. When all jobs are complete, type `pwrdownsys *immed` on a command line and press the Enter key.

**Note:** If you encounter difficulties during the installation, contact your authorized dealer or service provider.

- \_\_\_ 6. After your system unit has completely powered down, power off all PCs and devices, such as printers and display stations, that are connected to the system unit.
- \_\_\_ 7. Unplug any power cords, such as for printers, expansion units, and display stations, that are connected to the system unit.
- \_\_\_ 8. Unplug all the power cords for the system unit from the electrical outlet.
- \_\_\_ 9. Did you receive a 7002 internal flex cable with your expansion unit?
  - \_\_\_ **No:** Go to Chapter 2, "Set up your expansion unit," on page 13.
  - \_\_\_ **Yes:** Go to "Installing the 7002 cable" on page 8.

---

## Installing the 7002 cable

If your system unit came with the 7002 internal flex cable, you need to install it before you can set up your unit. To install the 7002 cable follow these steps:

- \_\_ 1. Remove the right side cover (view from back):
  - \_\_ a. Loosen the screws.
  - \_\_ b. Slide the cover from front to back until it stops.
  - \_\_ c. Pull the cover out.

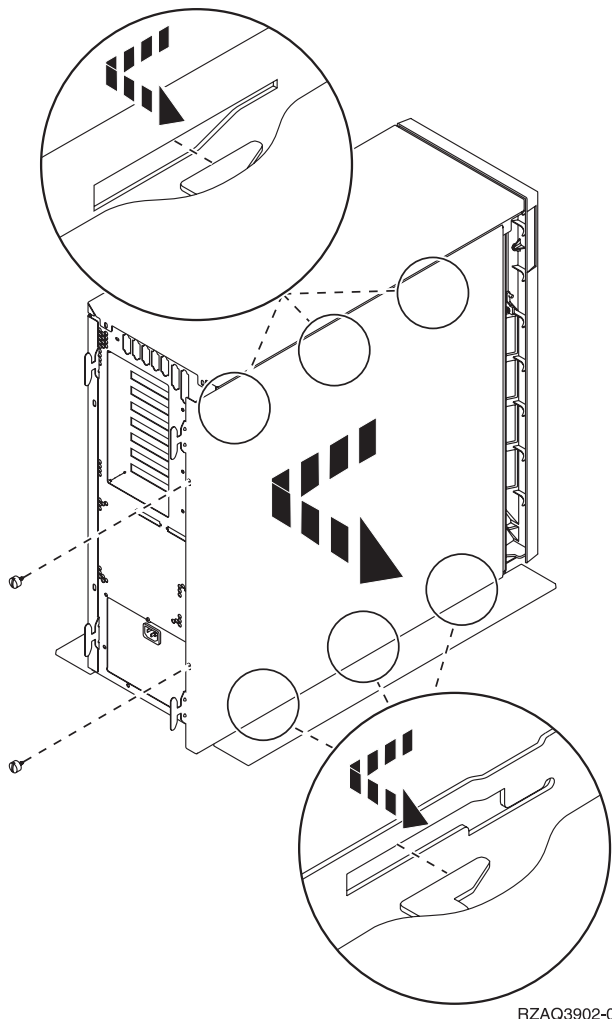


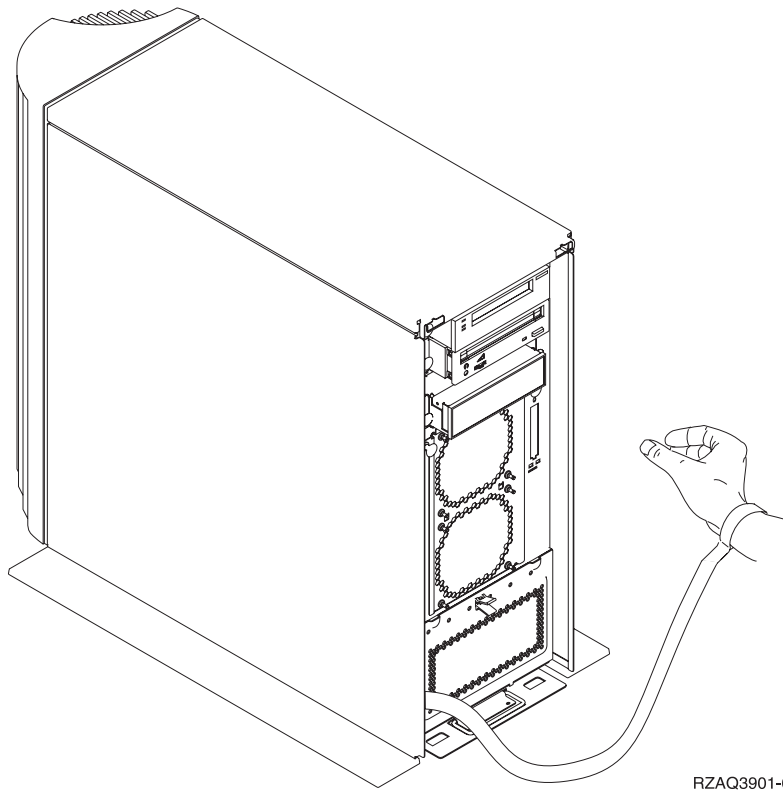
Figure 4. Remove system unit side cover

Your system unit contains a battery that only trained personnel can replace.

### CAUTION:

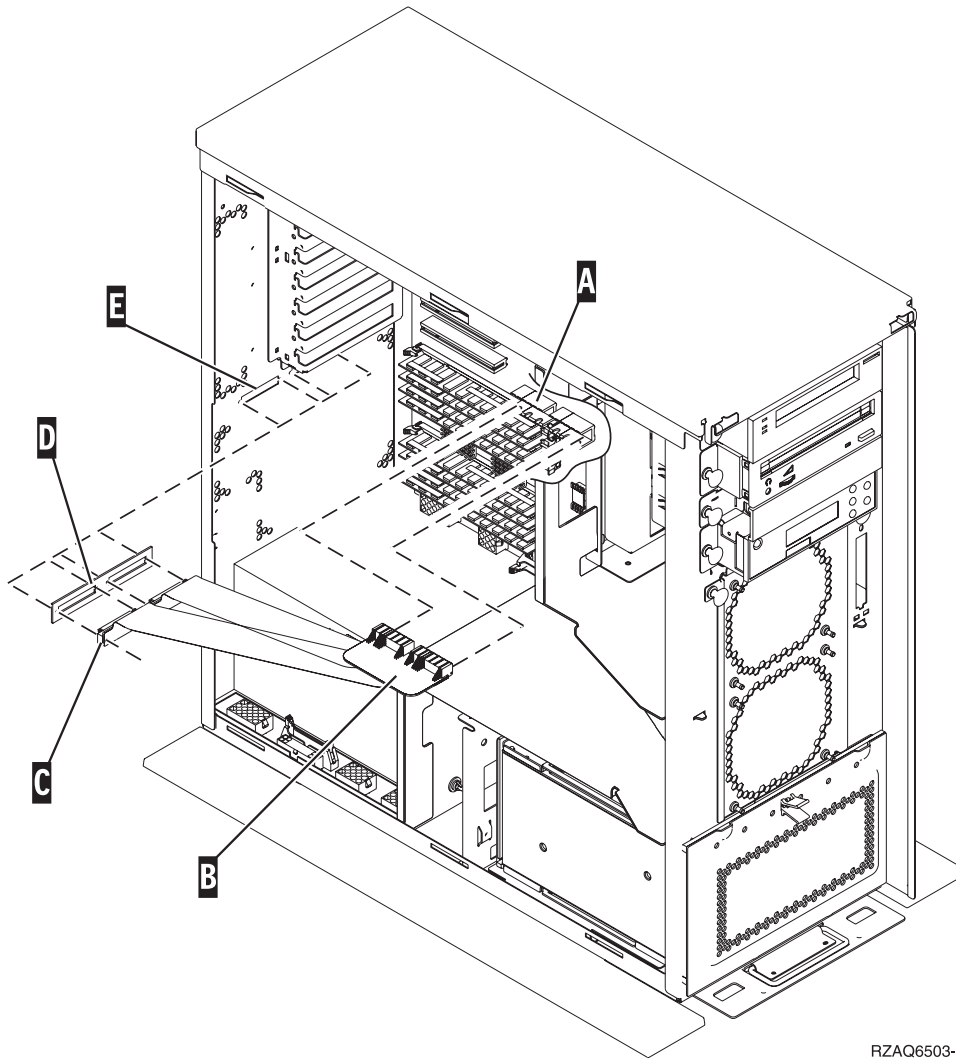
The battery is a lithium battery. Only trained service personnel may replace this battery using the instructions in the Problem Analysis, Repair, and Parts service manual. To avoid possible explosion, do not burn or charge the battery. Exchange only with the IBM-approved part. Discard the battery as instructed by local regulations. (RSFTC241)

- \_\_\_ 2. Attach the disposable wrist strap to prevent electrostatic discharge from damaging a device. **Figure 5** shows an example of where to attach the adhesive part of the foil on the wrist strap to an unpainted surface.



*Figure 5. Attach wrist strap*

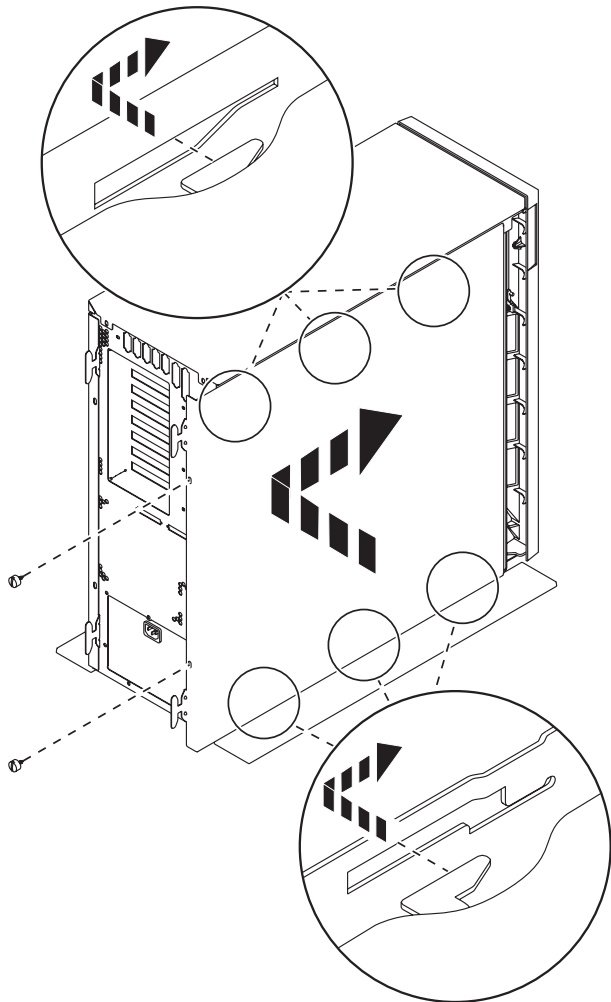
- \_\_\_ 3. Remove the plate covering the HSL cable ports at **E** (Figure 6 on page 10).
- \_\_\_ 4. Place gasket **D** over connectors **C**.
- \_\_\_ 5. Install connector **C** in HSL cable port at **E**.
- \_\_\_ 6. Install retaining screws into connector **B**.
- \_\_\_ 7. Plug connector **B** into backplane at **A**.



RZAQ6503-0

Figure 6. Installing the 7002 internal flex cable

- \_\_\_ 8. Remove the wrist strap.
- \_\_\_ 9. **Figure 7 on page 11** shows how to install the system unit side cover by aligning the tabs on the top and bottom edge. Press forward to make sure that all tabs enter the slots. Slide the cover toward the front of the system unit until it stops and install the screws.



RZAQ3910-0

Figure 7. Install system unit side cover





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## Chapter 2. Set up your expansion unit

This instruction describes how to set up your expansion unit.

- \_\_\_ 1. If you have not powered down your system unit, go to “Power down your iSeries system unit” on page 7. Once you have powered down your system unit, return here.
- \_\_\_ 2. Remove or open the back cover, if you have one.  
See Appendix A, “Remove or open the back covers,” on page 31 if you need help removing or opening the covers on your expansion units or system unit.
- \_\_\_ 3. Find the connector locations.  
See Appendix B, “Connector locations,” on page 37 if you need help finding the connectors on your expansion units or system unit.
- \_\_\_ 4. If your system unit has a migration unit, go to the *iSeries Information Center* and refer to *Installation, upgrades and migration* before you proceed.
- \_\_\_ 5. Review the “Examples of HSL Connections” on page 14 and “Examples SPCN Connections” on page 16 and then continue with “Connect your unit with HSL cables” or “Connect your unit with SPCN cables” on page 15.

---

### Connect your unit with HSL cables

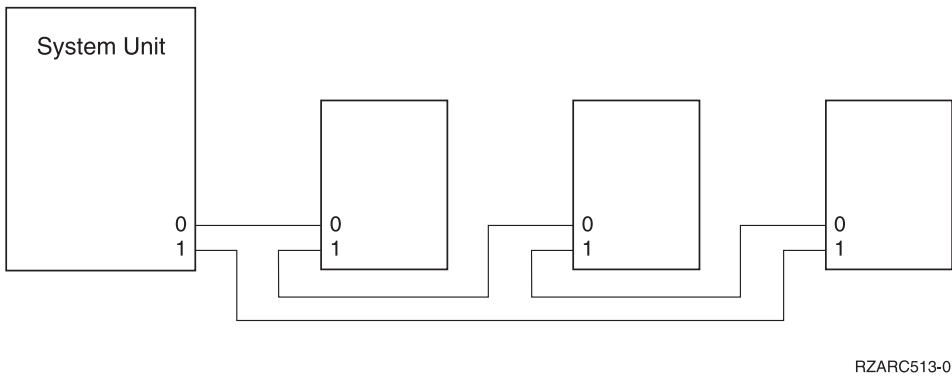
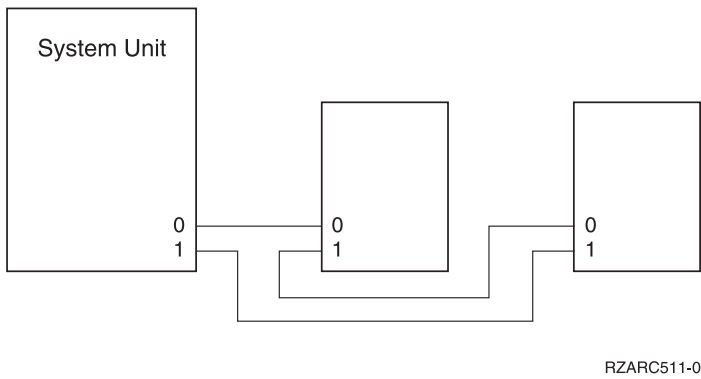
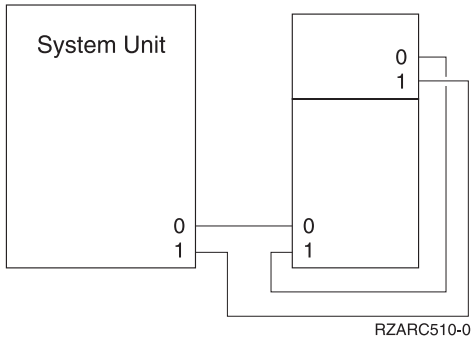
If you encounter difficulties during the procedure, contact your authorized dealer or service provider.

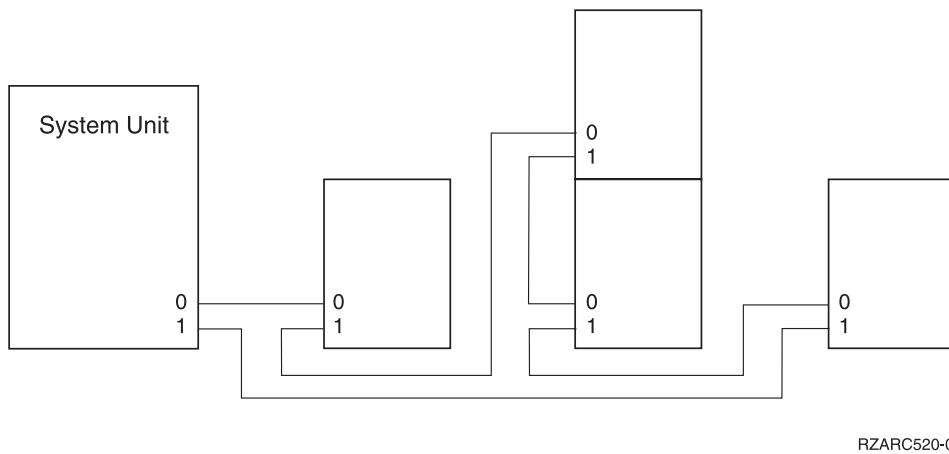
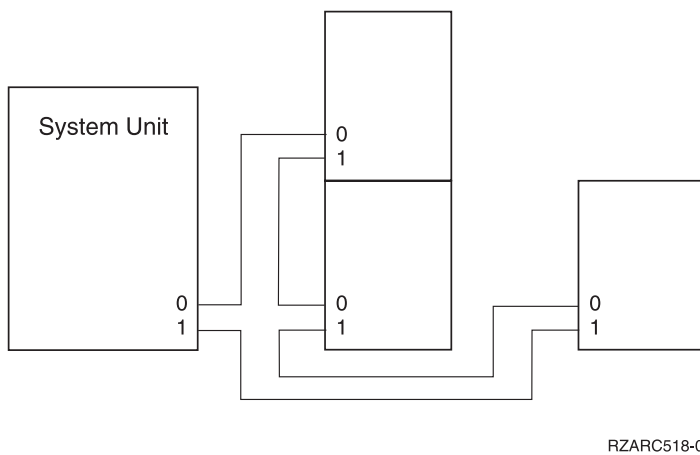
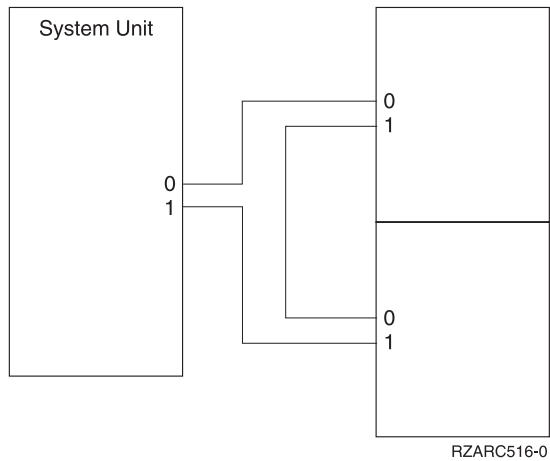
- \_\_\_ 1. Locate available HSL connectors on your unit. See Appendix B, “Connector locations,” on page 37.
- \_\_\_ 2. If you have just one set of HSL connectors on your system unit, they are labeled A0 and A1.  
If you have more than one set of HSL connectors on your system unit, the first set is labeled A0 and A1. The remaining HSL connectors are labeled alphabetically. For example, if you have a model 830, there are four sets of HSL connectors on your system. They are labeled A0 and A1; B0 and B1; C0 and C1; D0 and D1.  
Refer to “HSL loop addressing” on page 7.
- \_\_\_ 3. Write down which set of HSL connectors are available here: \_\_\_\_\_ , \_\_\_\_\_.
- \_\_\_ 4. Label and connect the cables to your unit.  
Unused HSL connectors may be covered with metal clips. Remove the clips before you install the HSL cables.
  - \_\_\_ a. Find the HSL cables and power cable that was shipped with your expansion unit.
  - \_\_\_ b. Attach a label to each end of the HSL cables.
  - \_\_\_ c. Label one HSL cable 0 at both ends.
  - \_\_\_ d. Label the other HSL cable 1 at both ends.
  - \_\_\_ e. To connect one expansion unit, do the following:
    - \_\_\_ 1) Connect the HSL cable that is labeled 0 to the HSL connector that is labeled 0 on your expansion unit.
    - \_\_\_ 2) Connect the HSL cable that is labeled 1 to the HSL connector that is labeled 1 on your expansion unit.
  - \_\_\_ f. To connect more than one expansion unit:
    - \_\_\_ 1) Label the next HSL cable 0 at one end and 1 at the other end.
    - \_\_\_ 2) Connect the HSL cable that is labeled 0 to the HSL connector that is labeled 0 on your expansion unit.
    - \_\_\_ 3) Connect the HSL cable that is labeled 1 to the HSL connector that is labeled 1 on your expansion unit.

- \_\_\_ 4) Repeat the above steps until all expansion units are connected.
- \_\_\_ 5. Connect the cables to the available HSL connectors on your system unit. See step 3 on page 13. Connect the cable that is labeled 0 to the HSL connector that is labeled 0 and the cable that is labeled 1 to the HSL connector that is labeled 1.
- \_\_\_ 6. Continue with "Connect your unit with SPCN cables" on page 15.

## Examples of HSL Connections

The following diagrams are examples that show HSL connections:





## Connect your unit with SPCN cables

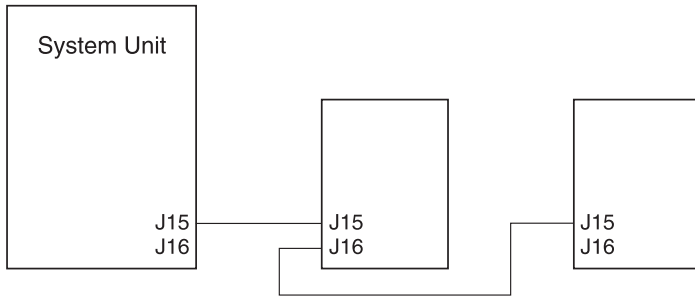
If you encounter difficulties during the procedure, contact your authorized dealer or service provider.

- \_\_\_ 1. Locate available connectors on your unit. See Appendix B, “Connector locations,” on page 37.
- \_\_\_ 2. Label and connect the cables to your unit.
  - \_\_\_ a. Find the SPCN cable and power cable that was shipped with your expansion unit.
  - \_\_\_ b. Connect the cable to connector J15 on your system unit.
  - \_\_\_ c. Connect the other end of the cable to connector J15 on your first expansion unit.

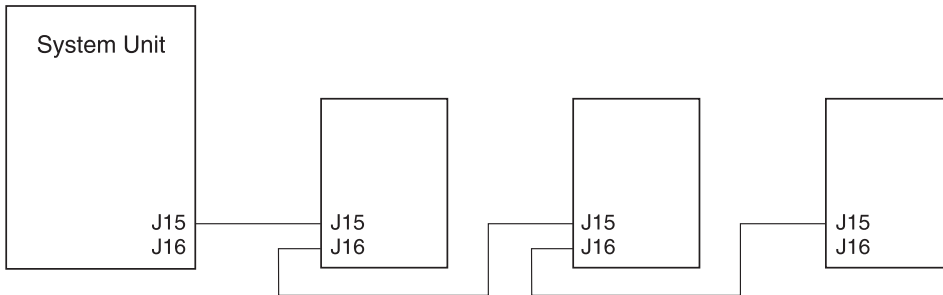
- \_\_\_ d. Connect another cable to connector J16 on your first expansion unit.
  - \_\_\_ e. Connect the other end of the cable to connector J15 on your next expansion unit.
  - \_\_\_ f. Repeat the above steps until all expansion units are connected.
  - \_\_\_ g. Connect the power cable. **Do not** plug into the wall outlet.
- \_\_\_ 3. Close or replace the back cover if you have one.
  - \_\_\_ 4. If you are installing a new server with this expansion unit, return to the *Cabling instructions*.
  - \_\_\_ 5. Continue with Chapter 3, "Complete your installation," on page 19.

## Examples SPCN Connections

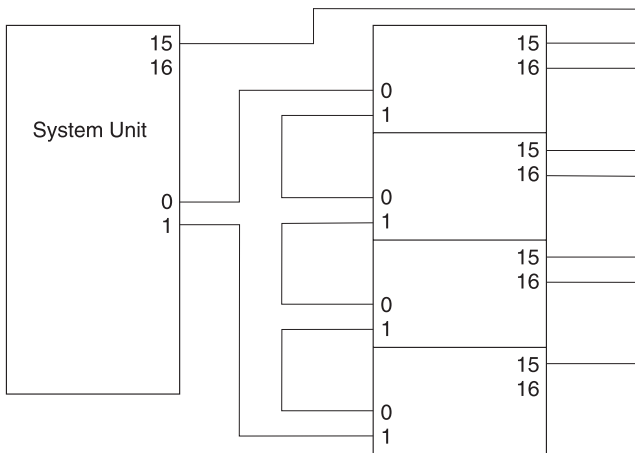
The following diagrams are examples that show SPCN connections:



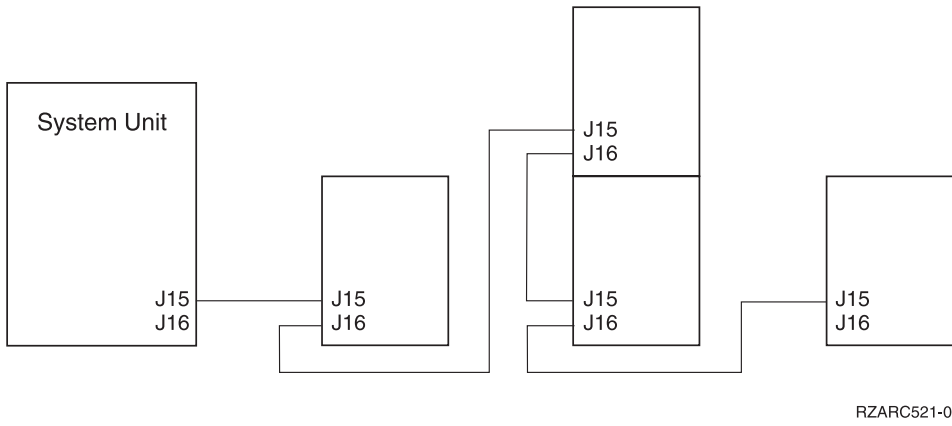
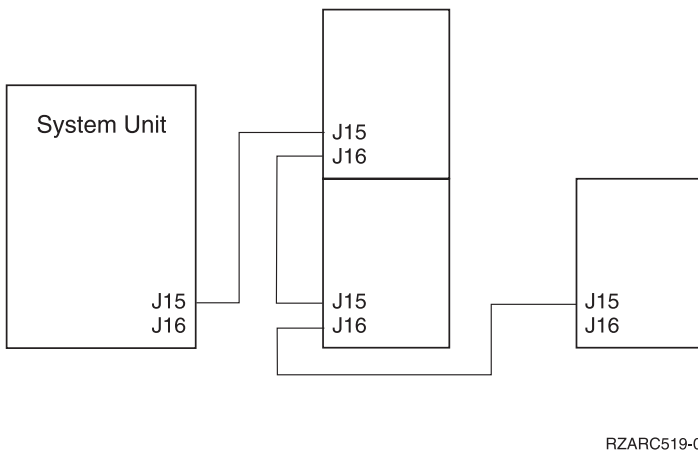
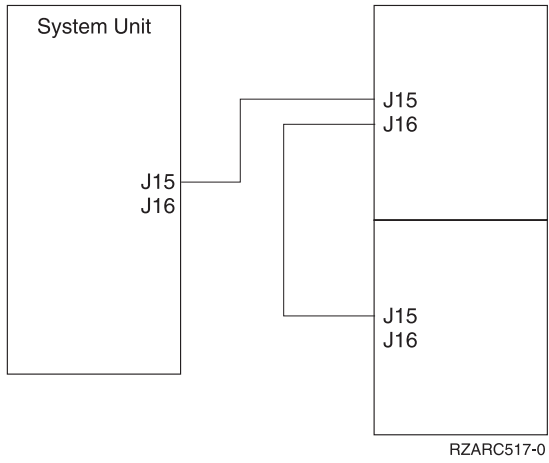
RZARC512-0



RZARC514-0



RZARC515-0





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## Chapter 3. Complete your installation

Perform the following steps to complete your installation:

- \_\_\_ 1. Make sure that you have reinstalled all of the covers on the following system components:
  - \_\_\_ a. System unit.
  - \_\_\_ b. All system expansion units.

### DANGER

**An electrical outlet that is not correctly wired could place hazardous voltage on metal parts of the system or the products that attach to the system. It is the customer's responsibility to ensure that the outlet is correctly wired and grounded to prevent an electrical shock. (RSFTD201)**

**Note:** The fans may start, and system reference codes will appear when you plug the power cord for your system unit. These actions are normal. They do not indicate that your system unit is performing an initial program load (IPL).

- \_\_\_ 2. Plug the power cords for the following system components into electrical outlets:
  - \_\_\_ a. Your system unit.
  - \_\_\_ b. All expansion units attached to the system.
  - \_\_\_ c. The system unit console.
  - \_\_\_ d. The system printer.
- \_\_\_ 3. Turn power on to each of the following system components by using the associated power-on button:
  - \_\_\_ a. The system printer (if present).
  - \_\_\_ b. The system control console.
- \_\_\_ 4. Look at the Function/Data display on the control panel. See Appendix C, "System unit control panel," on page 49 if you need information about your control panel.
- \_\_\_ 5. If your system unit is an Model 270, 800, or 810, go to step 7.
- \_\_\_ 6. If your system unit is an Model 820, 825, 830, 840, 870 or 890, go to step 8 on page 20.
- \_\_\_ 7. Does **01 B M V=S** appear in the Function/Data display?
  - \_\_\_ **Yes:** Go to step 9 on page 20.
  - \_\_\_ **No:** Do the following:
    - \_\_\_ a. Press the Increment/Decrement push button until **02** appears in the Function/Data display.
    - \_\_\_ b. Press the Enter push button on the control panel.
    - \_\_\_ c. Press the Increment/Decrement push button until **B** appears in the Function/Data display.
    - \_\_\_ d. Press the Enter push button on the control panel.
    - \_\_\_ e. Press the Increment/Decrement push button until **M** appears in the Function/Data display.
    - \_\_\_ f. Press the Enter push button on the control panel.
    - \_\_\_ g. Press the Increment/Decrement push button until **S** appears in the Function/Data display.
    - \_\_\_ h. Press the Enter push button on the control panel.
    - \_\_\_ i. Press the Increment/Decrement push button until **01** appears in the Function/Data display.

- \_\_\_ j. Press the Enter push button on the control panel.  
**01 B M S** should appear in the Function/Data display. If it does not, repeat steps 7a on page 19 through 7j.
- \_\_\_ k. Go to step 9.

\_\_\_ 8. Does **01 B V=S** appear in the Function/Data display?

**Note:** If you are using Operations Console remote control panel, it may be necessary to click Enter to verify IPL speed.

**Yes      No**

↓ Do the following:

- \_\_\_ a. Press the Mode Select button until the Manual indicator (a small hand) lights up.
- \_\_\_ b. Press the Increment/Decrement push button until **02** appears in the Function/Data display.
- \_\_\_ c. Press the Enter push button on the control panel.
- \_\_\_ d. Press the Increment/Decrement push button until **B** appears in the Function/Data display.
- \_\_\_ e. Press the Enter push button on the control panel.
- \_\_\_ f. Press the Increment/Decrement push button until **S** appears in the Function/Data display
- \_\_\_ g. Press the Mode Select button until the Normal indicator (**OK**) lights up.
- \_\_\_ h. Press the Increment/Decrement push button until **01** appears in the Function/Data display.
- \_\_\_ i. Press the Enter push button on the control panel.  
**01 B S** should appear in the Function/Data display. If it does not, repeat steps 8a through 8h.
- \_\_\_ j. Go to step 9.

\_\_\_ 9. Power on your system unit by pushing the white power-on button.

**Note:** The time needed to do a complete IPL varies depending on the model and configuration.

- \_\_\_ 10. Sign on your system unit. Ensure that you have service tools authority.
- \_\_\_ 11. Go to Chapter 4, "Verify your new configuration," on page 21.



---

## Chapter 4. Verify your new configuration

Verify your new configuration by performing the following:

- \_\_\_ 1. Type **strsst** on the command line. Press Enter.
- \_\_\_ 2. Type **your service tools userid and service tools password** on the *System Service Tools (SST) Sign On* display.  
Press Enter.
- \_\_\_ 3. Select **Start a service tool** on the *System Service Tools (SST)* display.  
Press Enter.
- \_\_\_ 4. Select **Hardware service manager** on the *Start a Service Tool* display.  
Press Enter.
- \_\_\_ 5. Select **Packaging hardware resources (system, frames, cards...)** on the *Hardware Service Manager* display.  
Press Enter.

Your new expansion unit appears on the list. Record the Frame ID and Resource name here: \_\_\_\_\_, \_\_\_\_\_. If your expansion unit does not appear, you need to verify your installation by performing these steps:

- \_\_\_ a. Make sure that you powered on your expansion unit.
- \_\_\_ b. Make sure that you installed the cables correctly.
- \_\_\_ 6. You need to update vital product data (VPD) for your new expansion unit:
  - \_\_\_ a. Press F3 to return to the *Hardware Service Manager* display.
  - \_\_\_ b. At the *Hardware Service Manager* display, select **System power control network (SPCN)**.
  - \_\_\_ c. Press the Enter key twice.

### Notes:

- 1. If you installed a 5294, you need to find the Frame ID and Serial Number for both 5294-002 and 5294-001.
- 2. You can also find the Frame ID by looking at the display on the expansion unit. For example, if the Frame ID for your 5294-002 (the upper unit) is 4, a \*04 will appear on the display.
- \_\_\_ d. Enter a **3** (*Write VPD*) for your expansion unit. Press Enter.

**Example:** If the Frame ID for your expansion unit is 2, enter option **3**, as is shown in the example below. Use the Frame ID with a **0** in the *Unit* field.

```
System Power Control Network
Battery capacity test . . . . . : Enabled
Type options, press Enter.
 3=Write VPD   5=Display detail   6=Display trace log
 7=Test battery interface

Opt   Frame   Unit   Type   Serial   Fault
      01     0     ....  00-00000  No
      01     1     ....  00-00000  No
      03     0     ....  00-00000  No
      03     1     ....  00-00000  No
 3    02     0     ....  00-00000  No
      02     1     ....  00-00000  No
```

- \_\_\_ e. At the *Write Vital Product Data (VPD)* display enter the following information:

- \_\_\_ 1) At the *Type* field enter **0588**, **0595**, **5088**, **5094** or **5095**.
- \_\_\_ 2) At the *Model* field, enter **001**. Except if you have a 5294, enter **001** for 5294–001 (the lower unit) or **002** for the 5294–002 (the upper unit).
- \_\_\_ 3) Enter the serial number at the *Serial Number* field (located on the frame of the expansion unit).

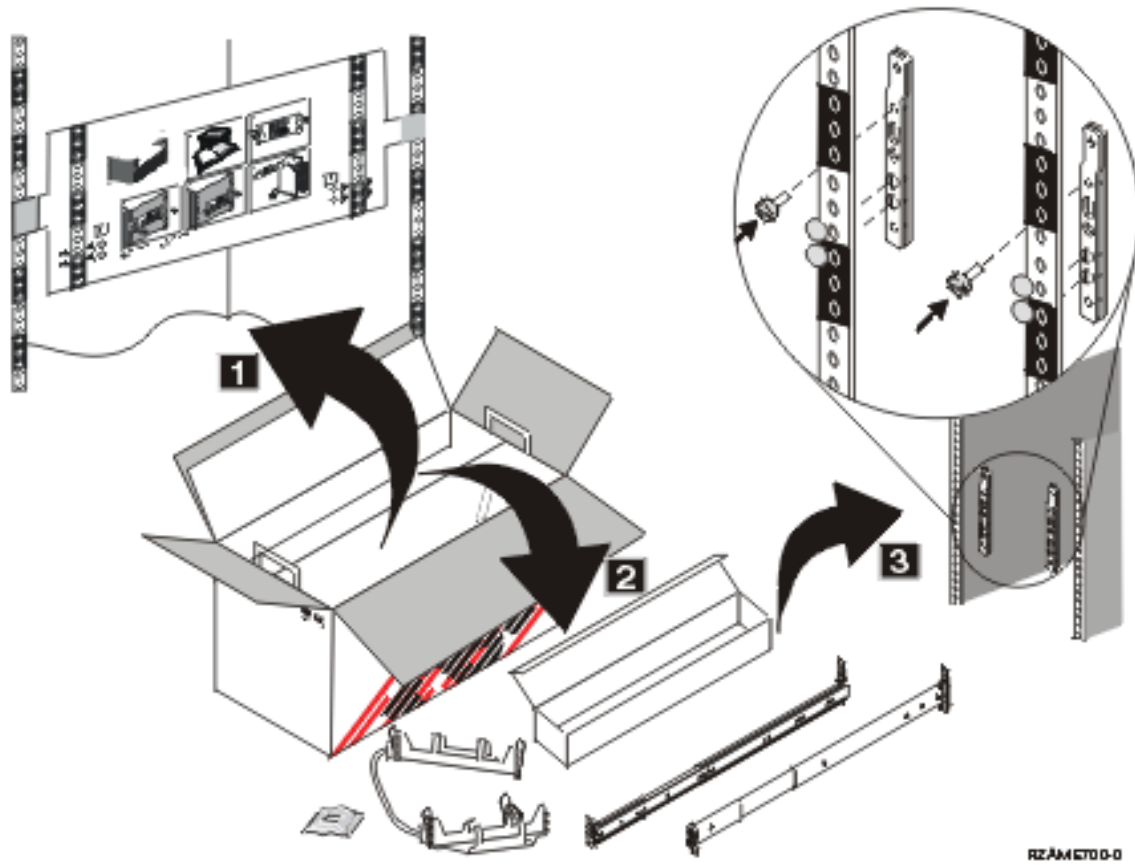
\_\_\_ f. Press the Enter Key.

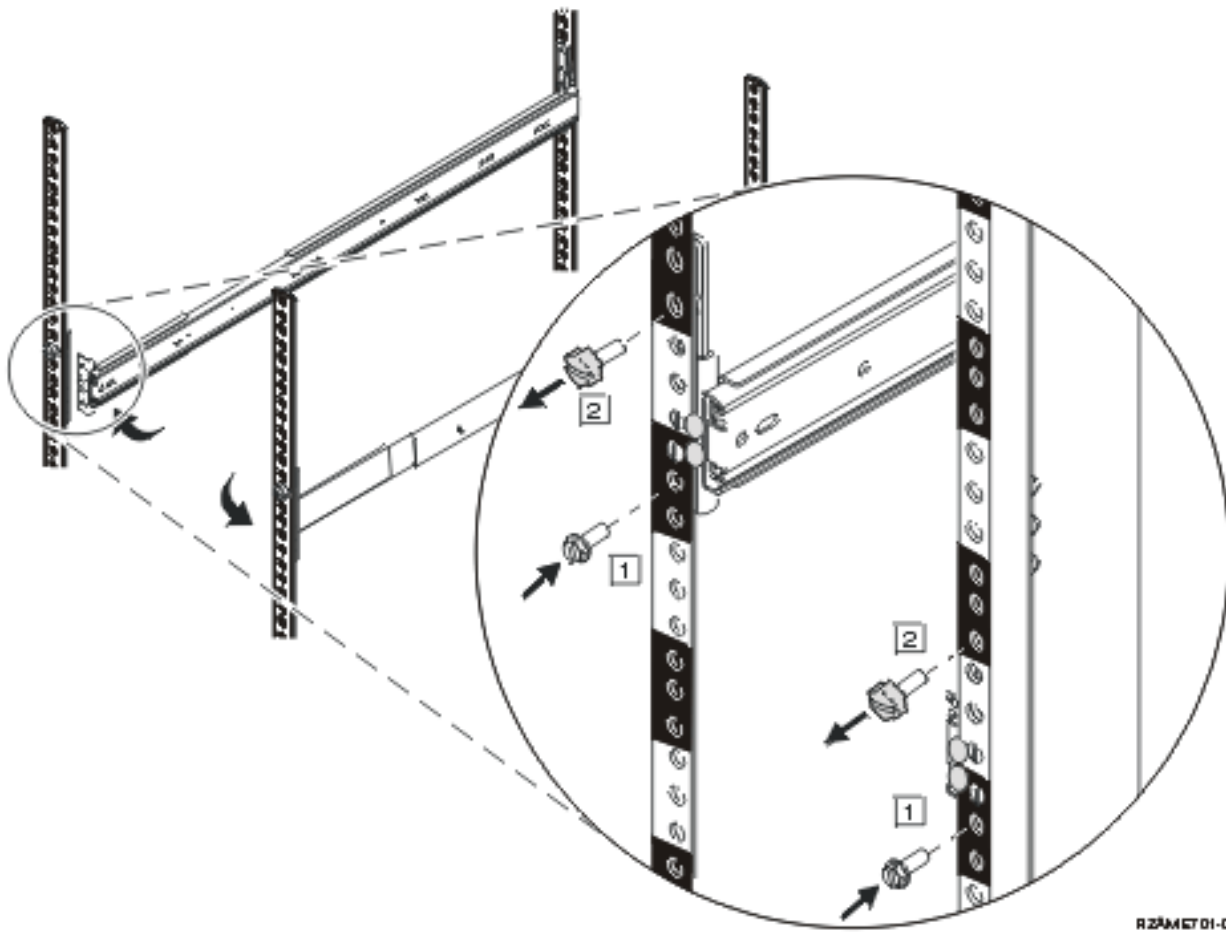
The message: Vital product data has been successfully written appears.

- \_\_\_ 7. Press F3 to return to the *Hardware Service Manager* display.
- \_\_\_ 8. From the *Hardware Service Manager* display press F6 (print the configuration) to print the configuration list.
- \_\_\_ 9. For future reference, place the configuration list in this book.
- \_\_\_ 10. To return to the Main menu, press F3 (Exit) two times and press the Enter key.

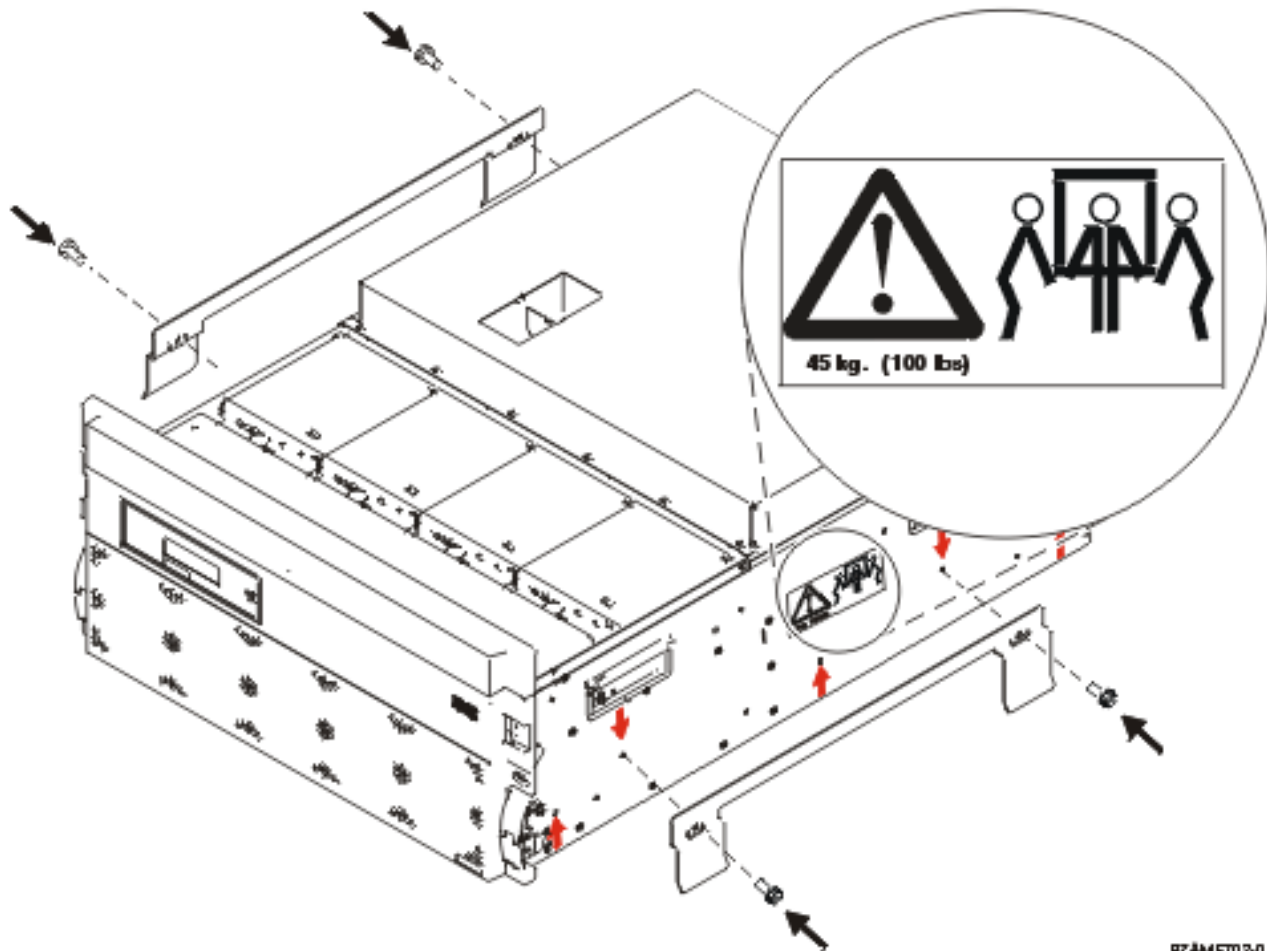
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## Chapter 5. Install 0595 expansion unit in a rack

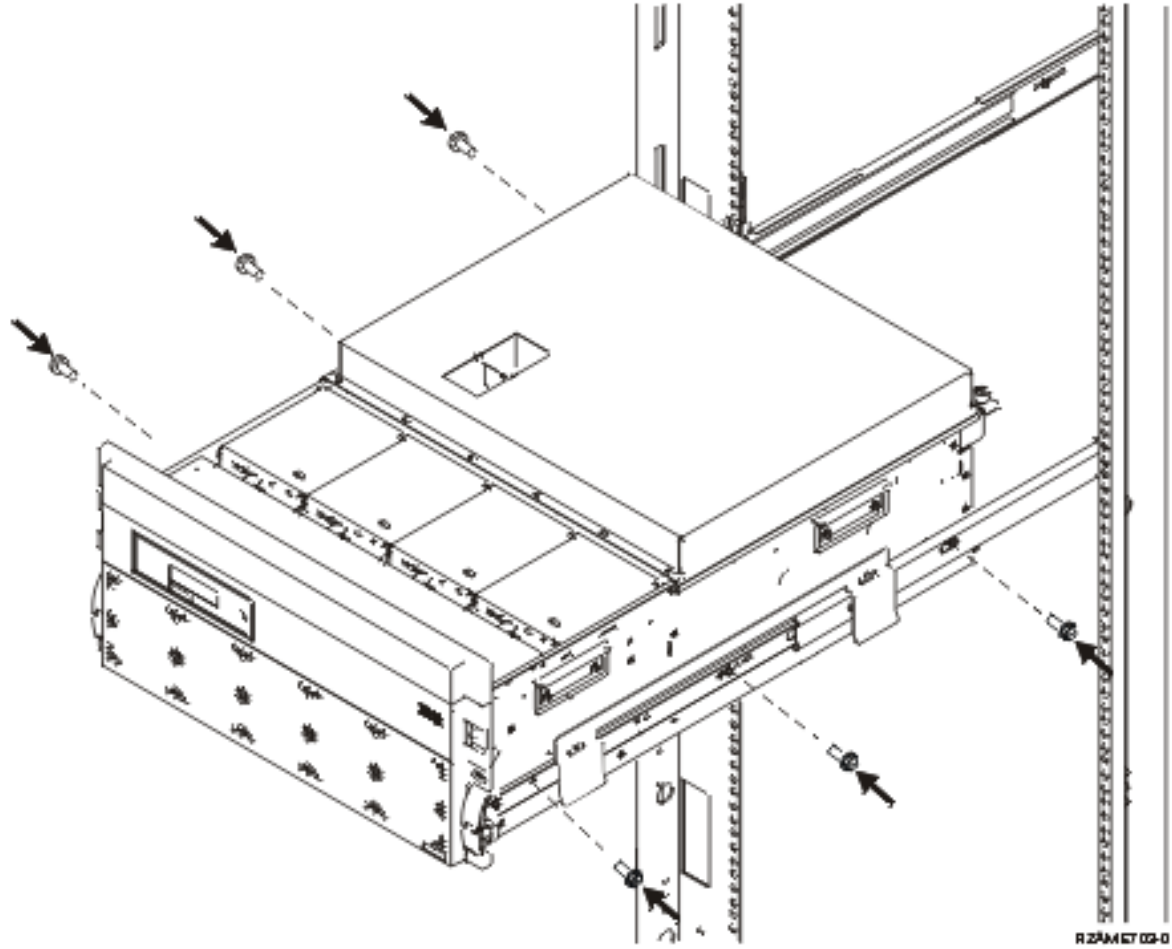


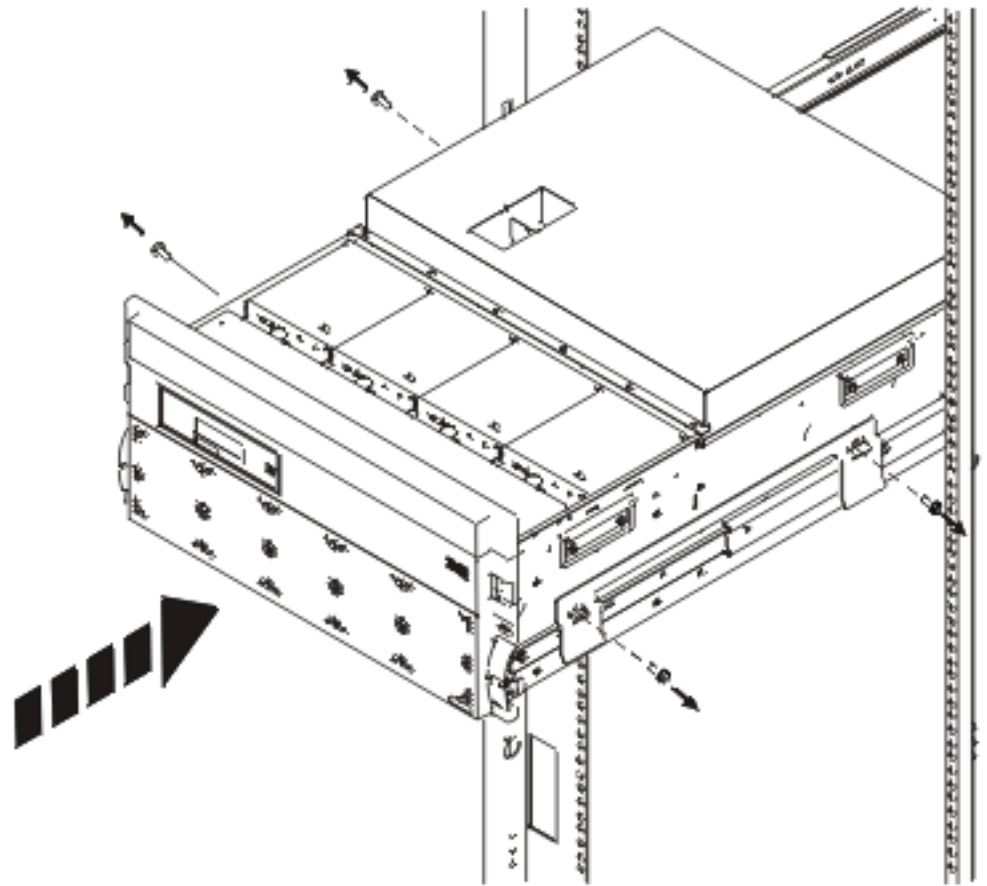


RZMET01-0

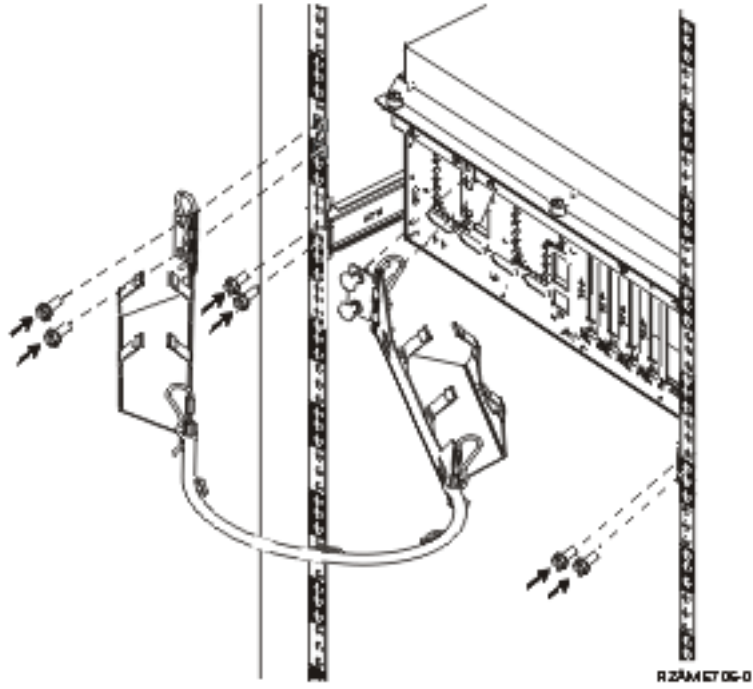


RZAMCT03-0

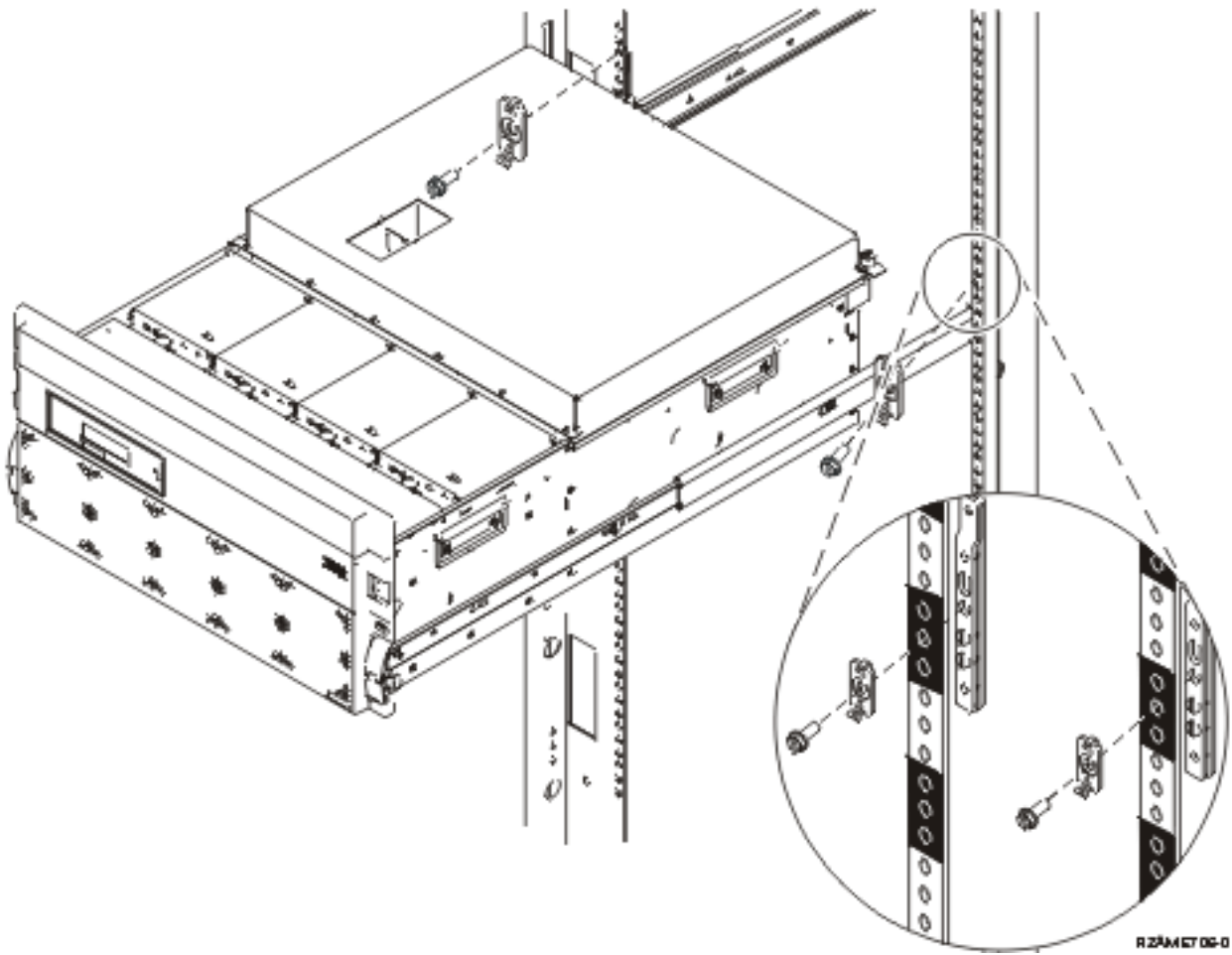


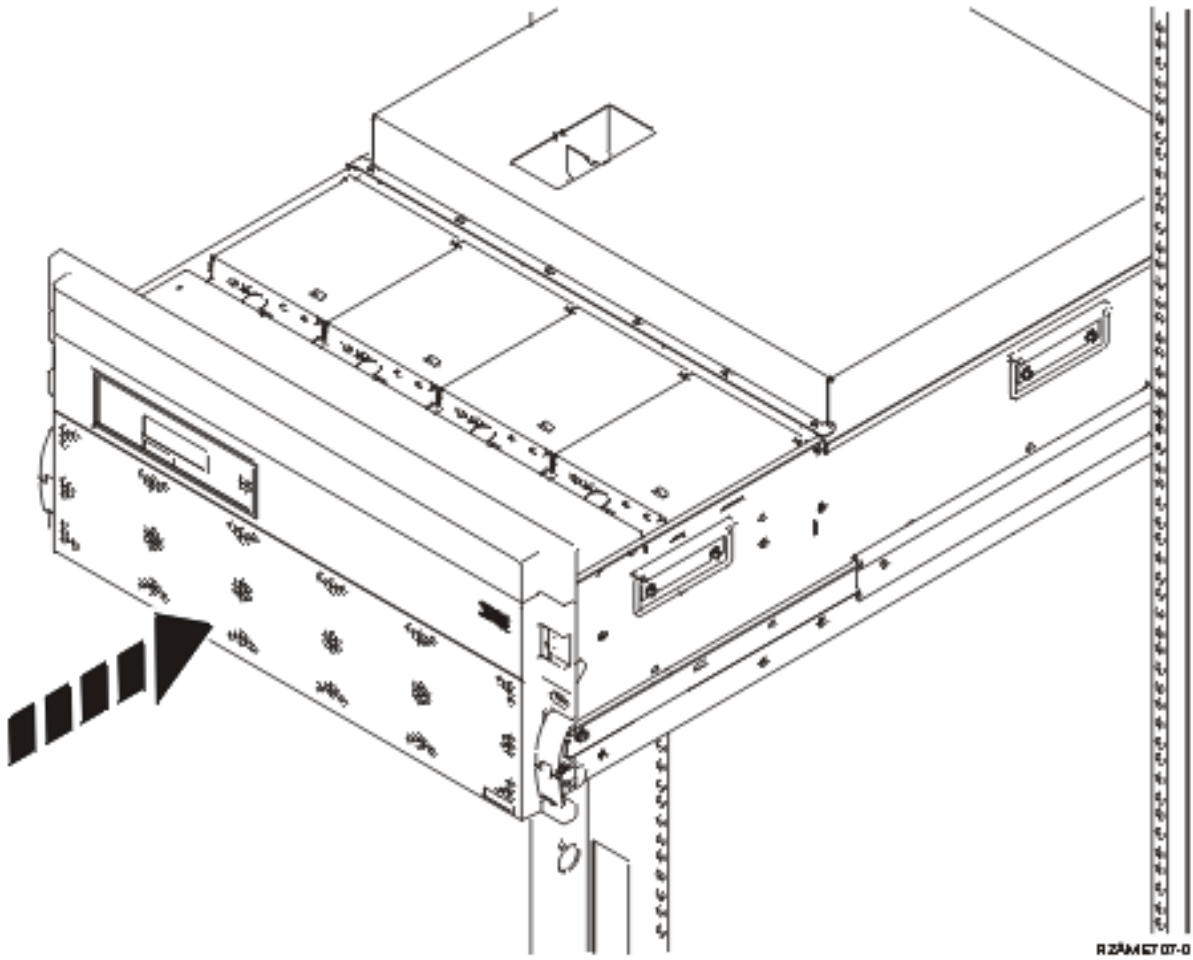


R24MCT040









R24MCT07-0

Return to Chapter 1, "Prepare to set up your expansion unit," on page 1 and continue with the instructions.

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## Appendix A. Remove or open the back covers

Locate your unit:

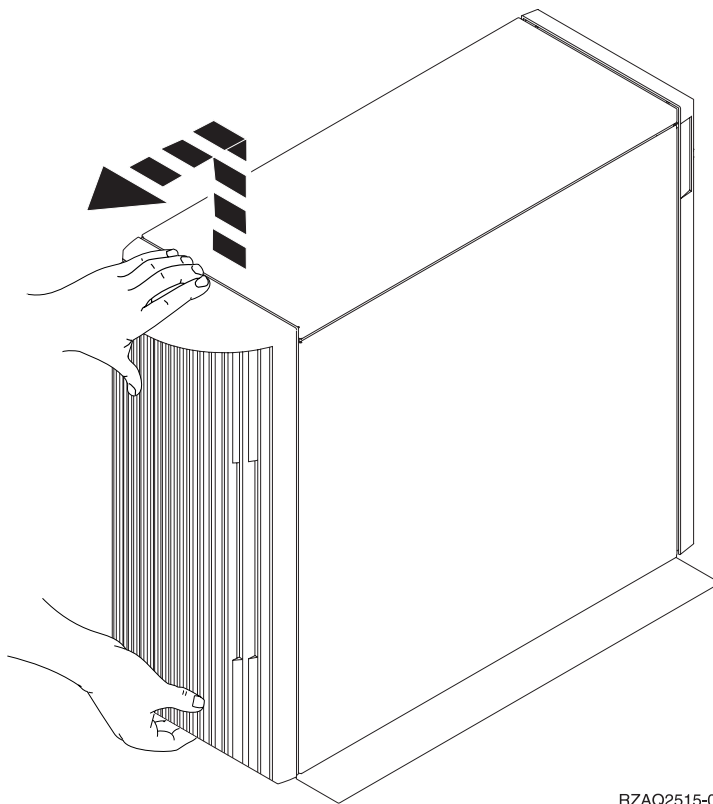
- “270, 800, 810, 820, and 5075 back cover”
- “825 back cover”
- “830, 5074, 5094, 5095 back cover” on page 32
- “840, 5079 and 5294 back cover” on page 33
- “870 and 890 back cover” on page 34

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### 270, 800, 810, 820, and 5075 back cover

Remove the back cover for the system unit by gripping the upper corners of the cover and pulling it up and toward you.

**Note:** The 270 and 820 back covers do not look the same. However, the procedure to open them is the same.



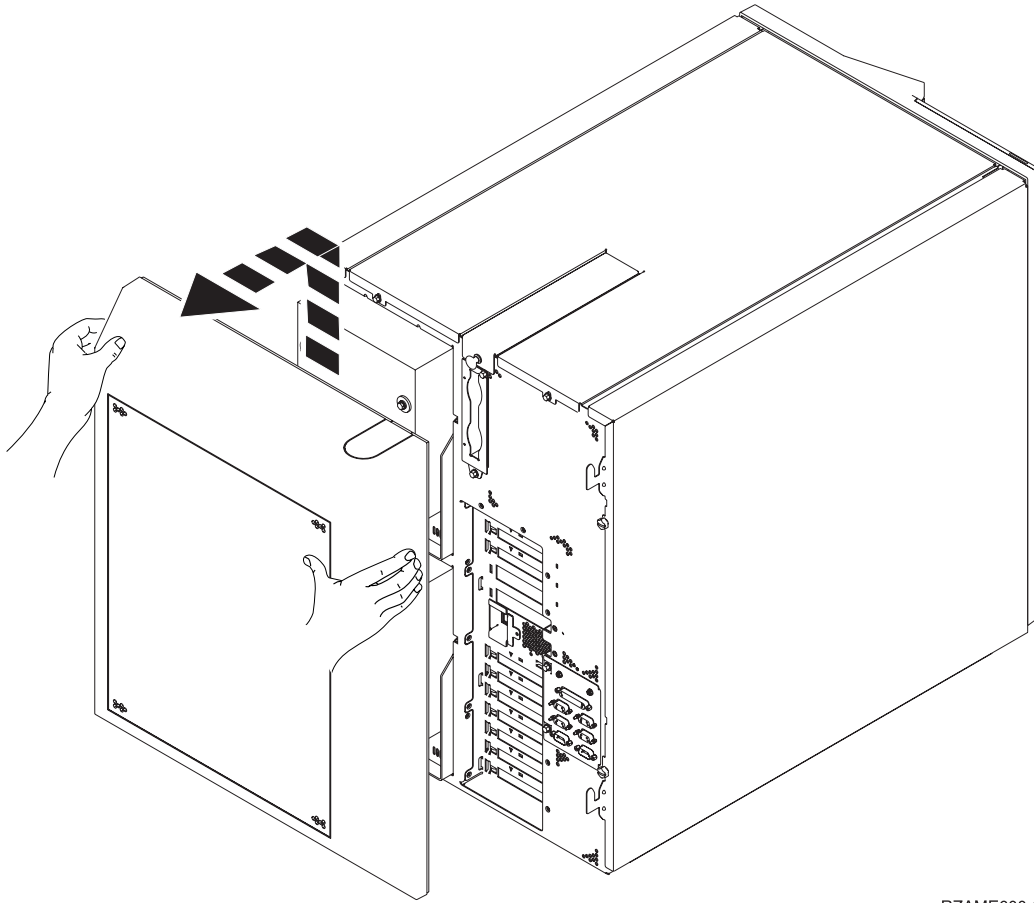
RZAQ2515-0

Figure 8. Removing the 5075 and 270 back cover

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### 825 back cover

Remove the back cover for the system unit by gripping the upper corners of the cover and pulling it up and toward you.



RZAME600-0

Figure 9. Removing the 825 back cover

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### 830, 5074, 5094, 5095 back cover

1. Use the latch shown at **A** to open the back cover on your expansion unit.
2. If needed, use the latch shown at **B** to remove the back cover.

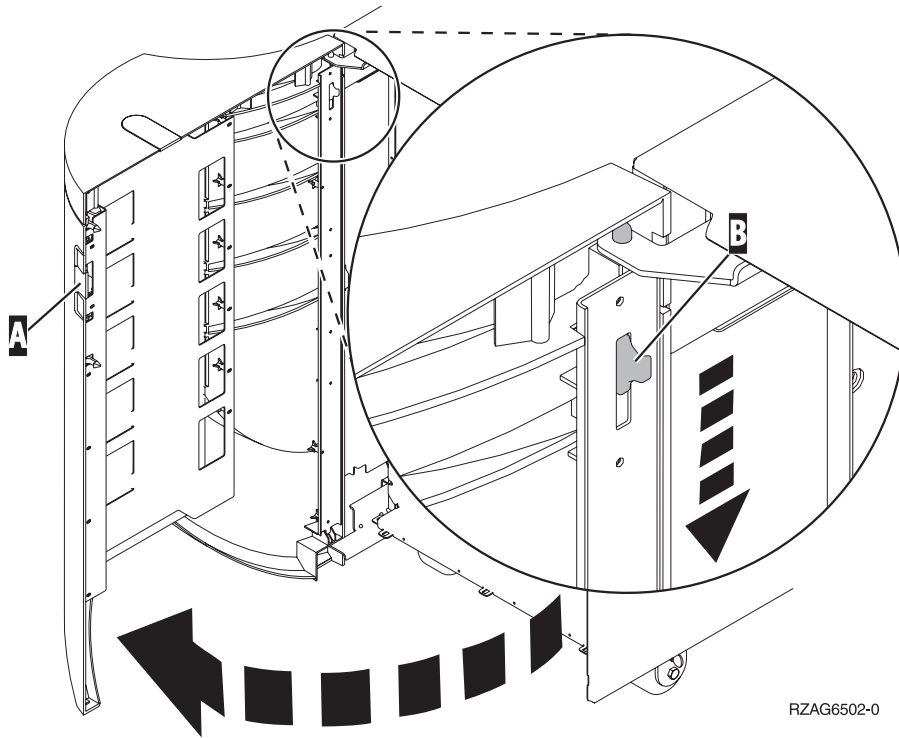
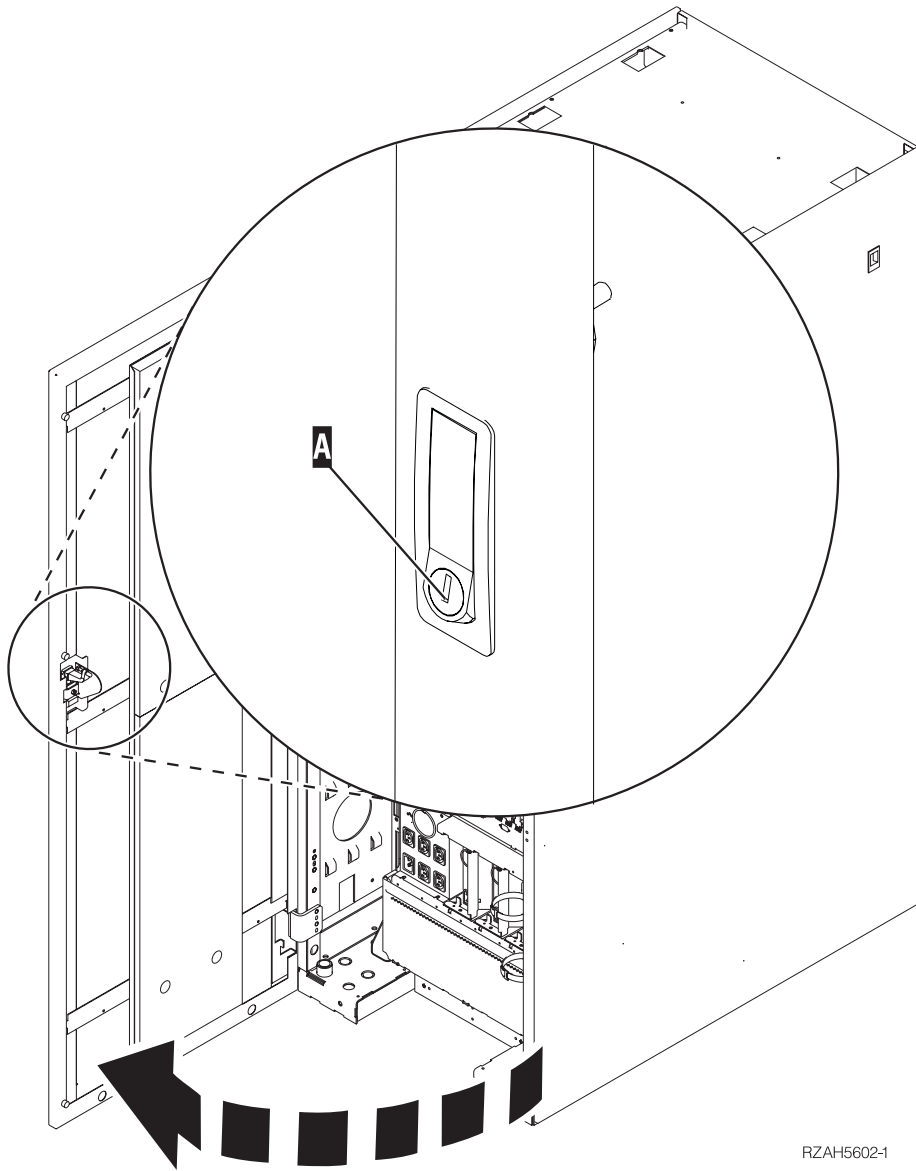


Figure 10. Removing the 830, 5074 and 5094 back cover

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### 840, 5079 and 5294 back cover

Open the back cover on your 840 or 5079 by pressing the latch at **A**.



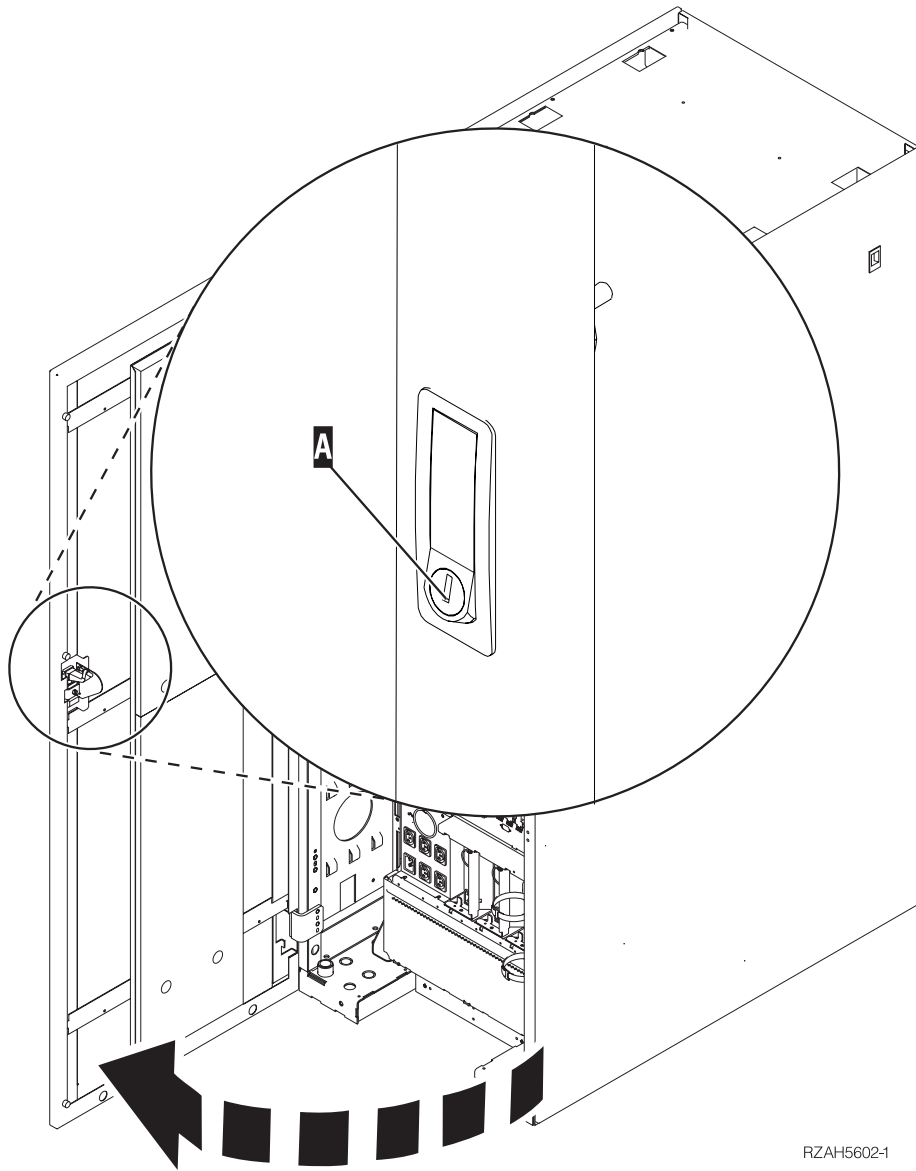
RZAH5602-1

Figure 11. Opening the 840, 5079 or 5294

---

## 870 and 890 back cover

1. Use the latch shown at **A** to open the back cover on your expansion unit.



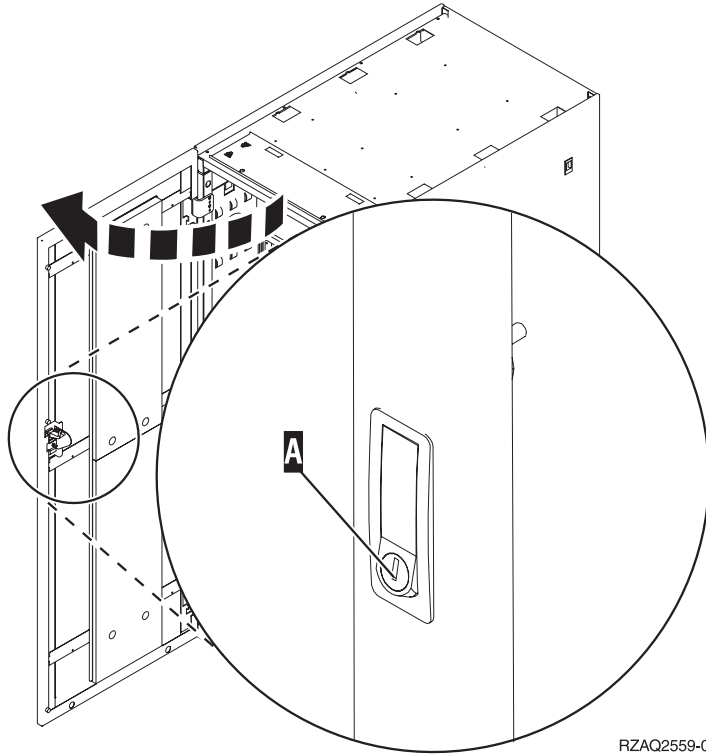
RZAH5602-1

Figure 12. Opening the 870 or 890 back cover

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## Accessing units in a rack

1. Move to the back of the rack, press latch **A**, and open the back door of the rack.



RZAQ2559-0



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## Appendix B. Connector locations

Locate your unit and connector locations:

- “270, 800, and 810 HSL connector locations” on page 38
- “820 HSL connector locations” on page 38
- “825 HSL connector locations” on page 39
- “830 HSL connector locations” on page 40
- “840 HSL connector locations” on page 41
- “870 and 890 HSL connector locations” on page 42
- “5079 connector locations” on page 43
- “5074 connector locations” on page 44
- “5075 connector locations” on page 44
- “5078 or 0578 connector locations” on page 45
- “5088 or 0588 connector locations” on page 45
- “5094 connector locations” on page 46
- “5095 or 0595 connector locations” on page 46
- “5294 connector locations” on page 47
- “8079 connector locations” on page 47
- “8093 connector locations” on page 47
- “8094 connector locations” on page 47
- “9094 connector locations” on page 48

## 270, 800, and 810 HSL connector locations

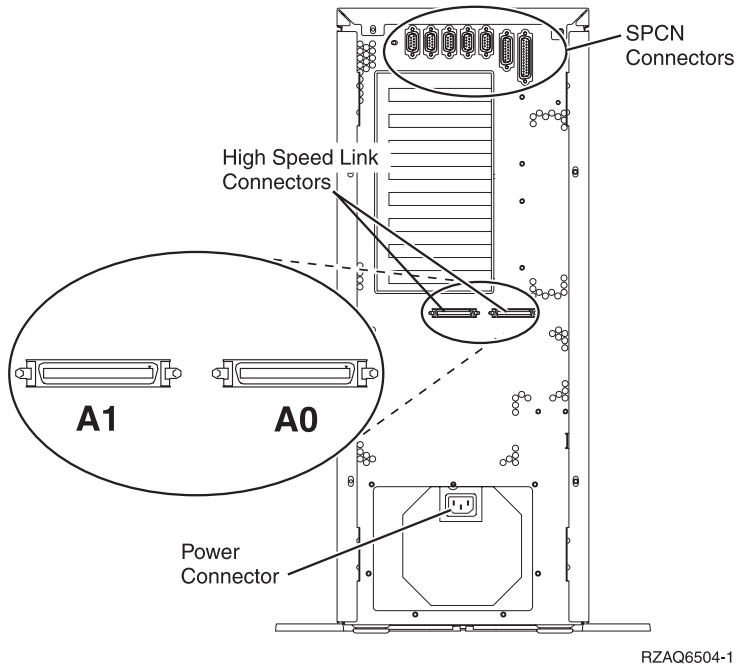


Figure 13. 270, 800, and 810 HSL connector locations

## 820 HSL connector locations

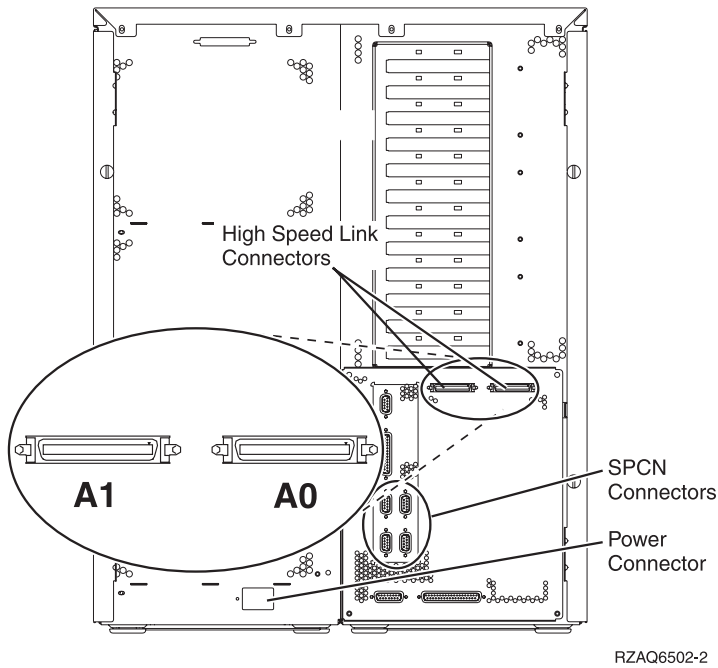


Figure 14. 820 HSL connector locations

## 825 HSL connector locations

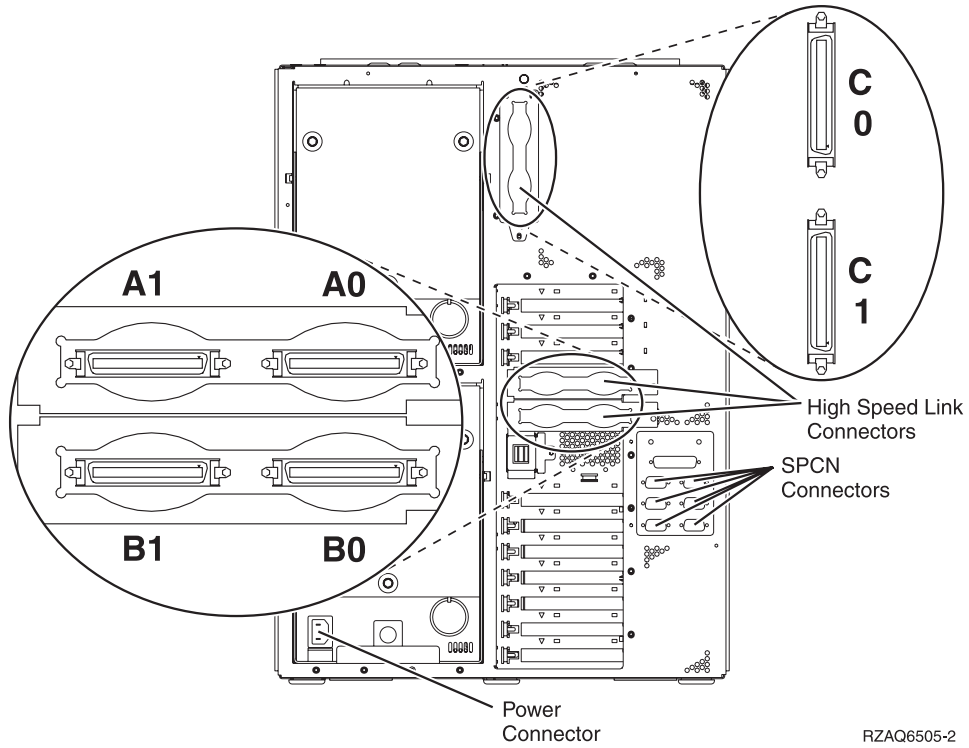
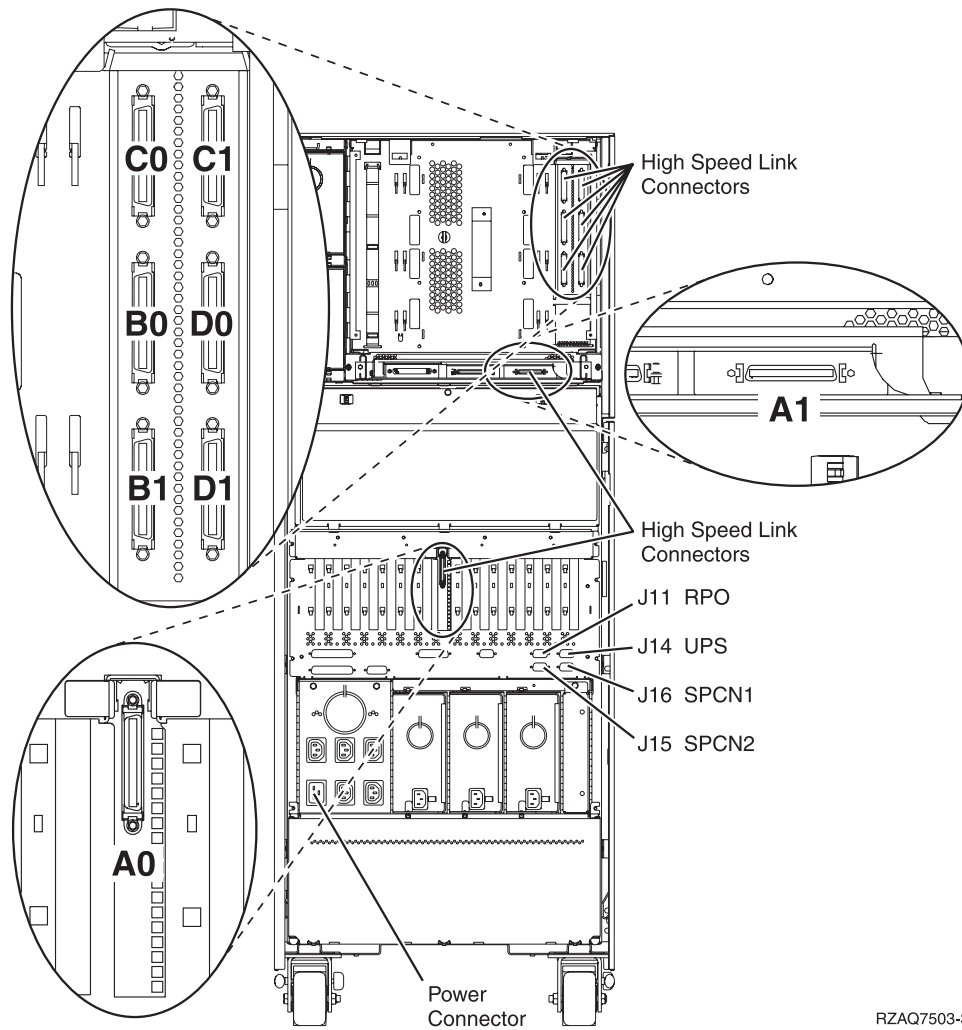


Figure 15. 825 HSL connector locations

## 830 HSL connector locations



RZAQ7503-3

Figure 16. 830 HSL connector locations

# 840 HSL connector locations

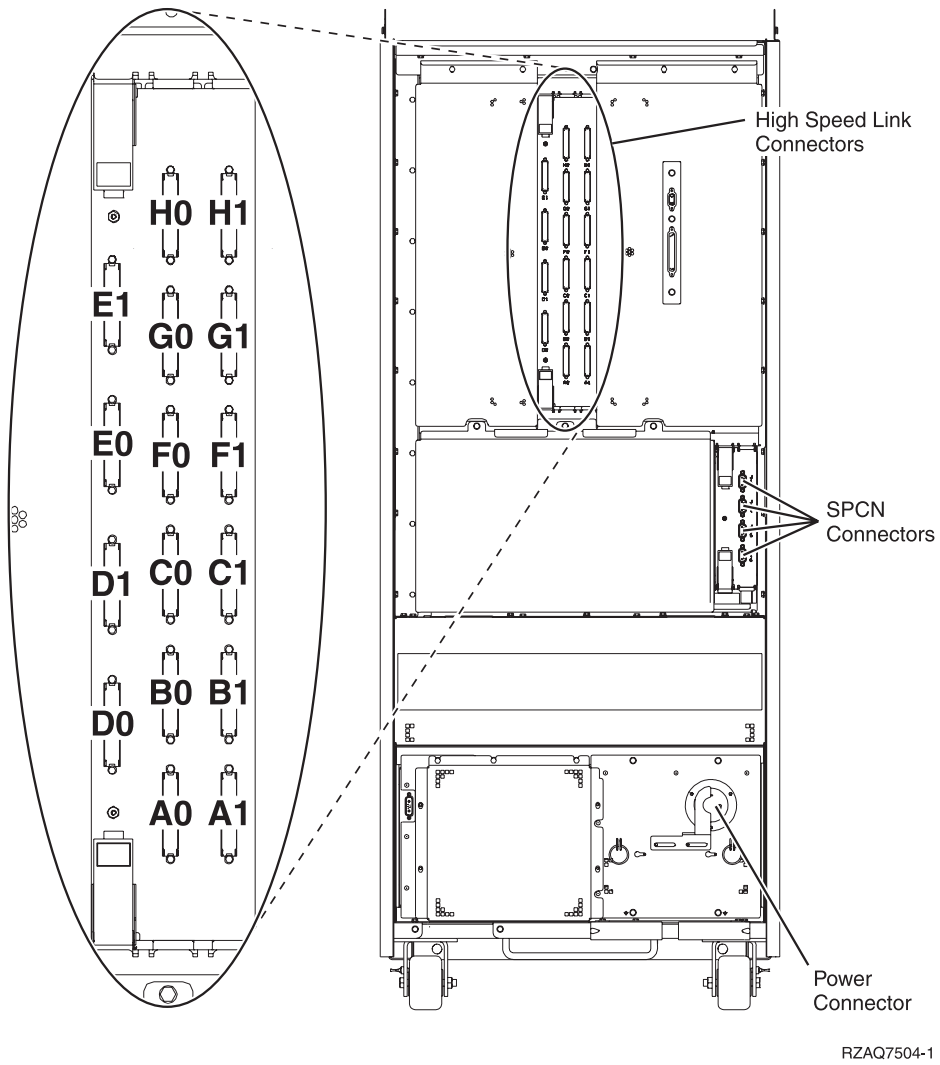
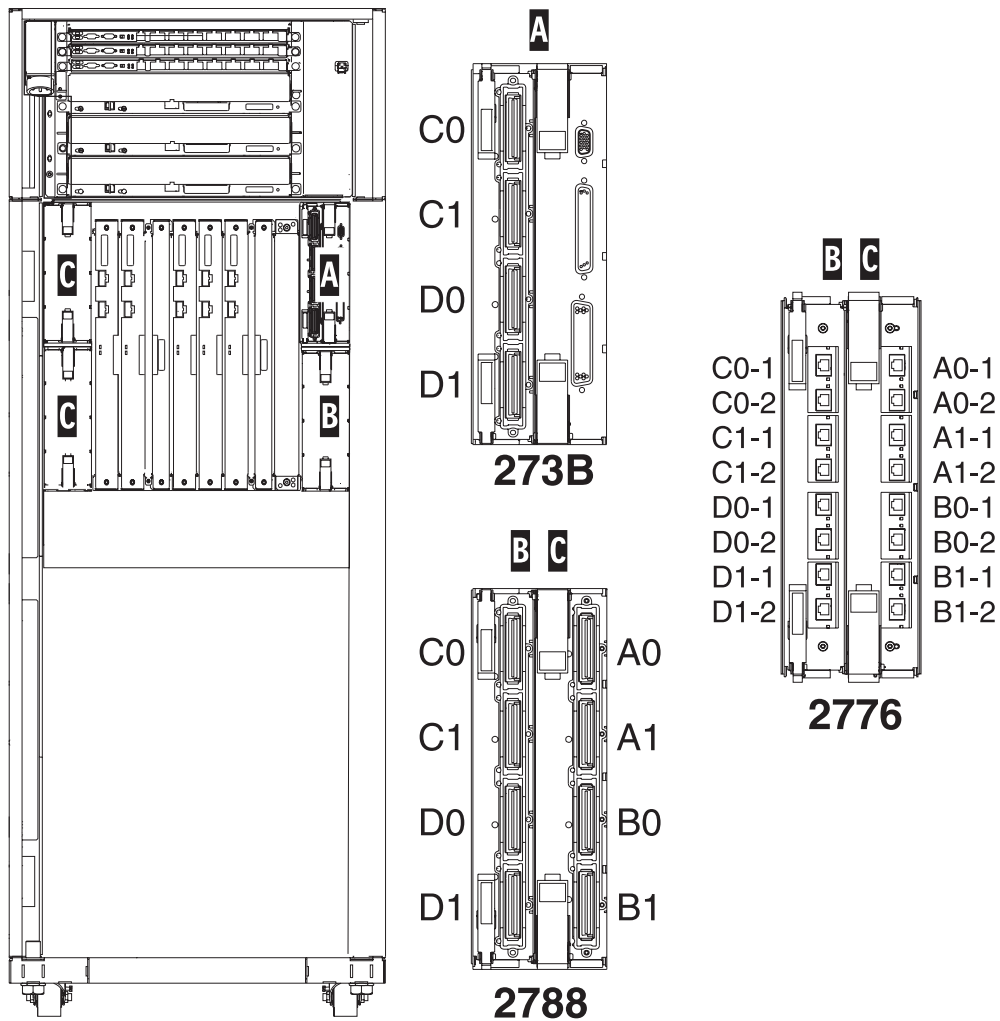


Figure 17. 840 HSL connector locations

## 870 and 890 HSL connector locations



Note: Connector Positions in Location **C** will be rotated 180 degrees.

RZAQ7513-1

Figure 18. 890 HSL connector locations

Also, refer to Figure 27 on page 48.

# 5079 connector locations

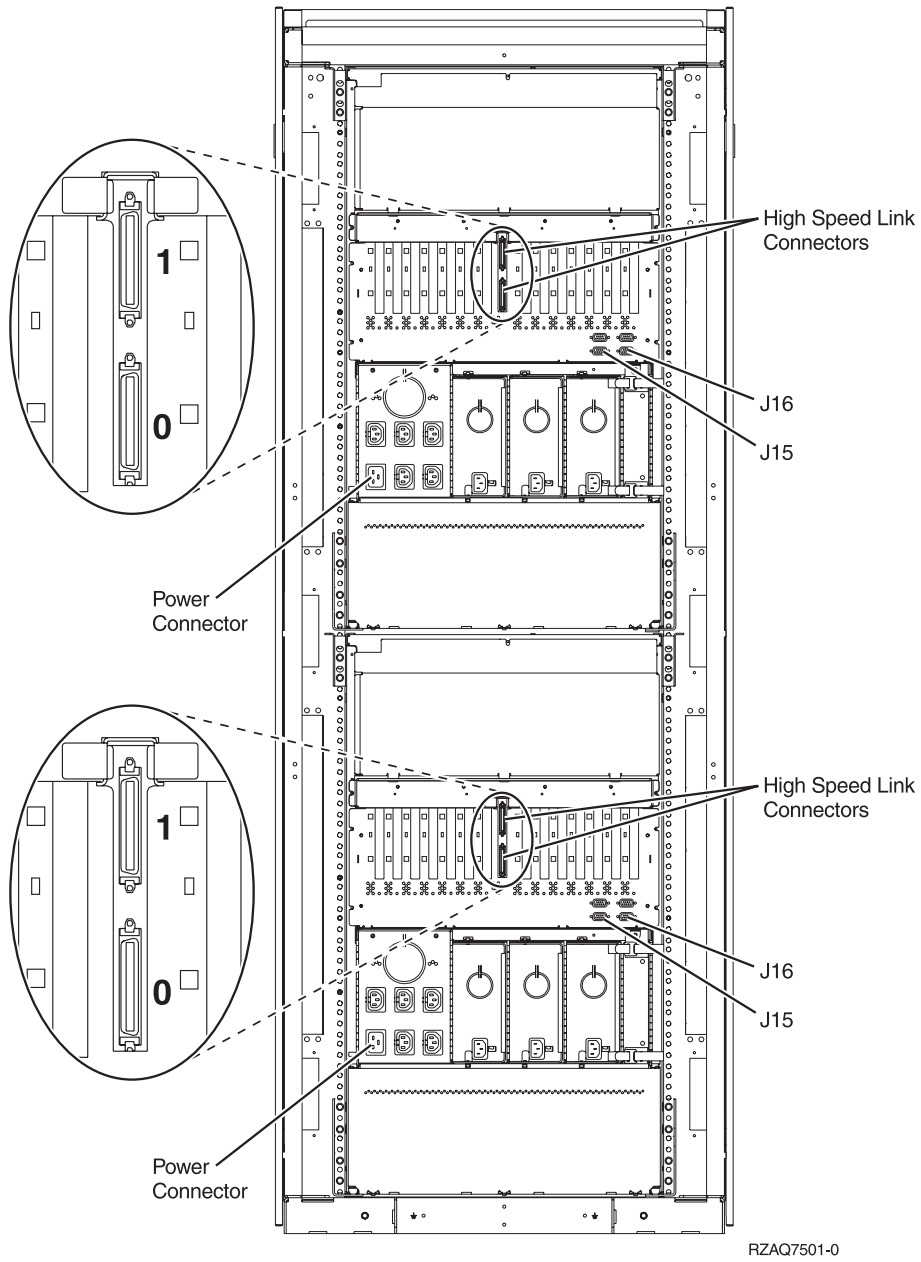


Figure 19. 5079 connector locations

## 5074 connector locations

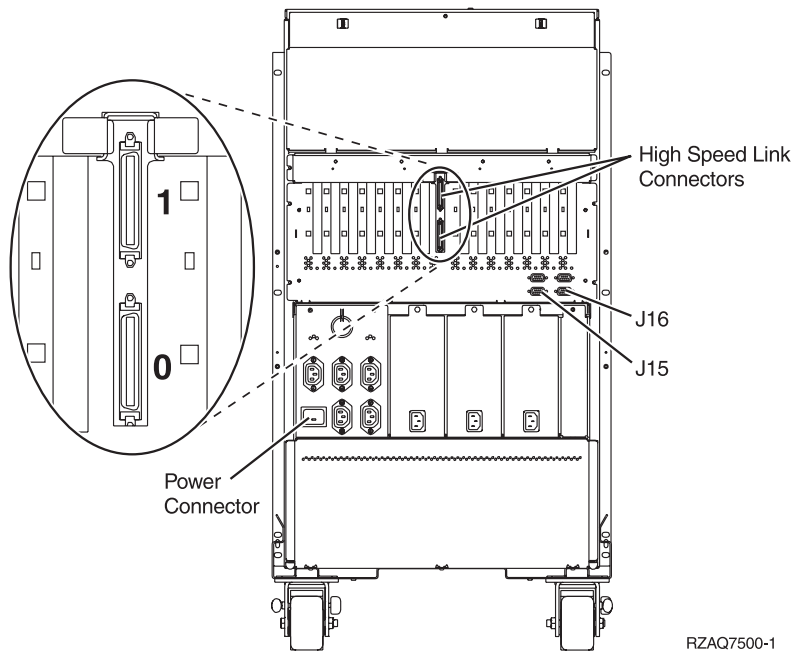


Figure 20. 5074 connector locations

## 5075 connector locations

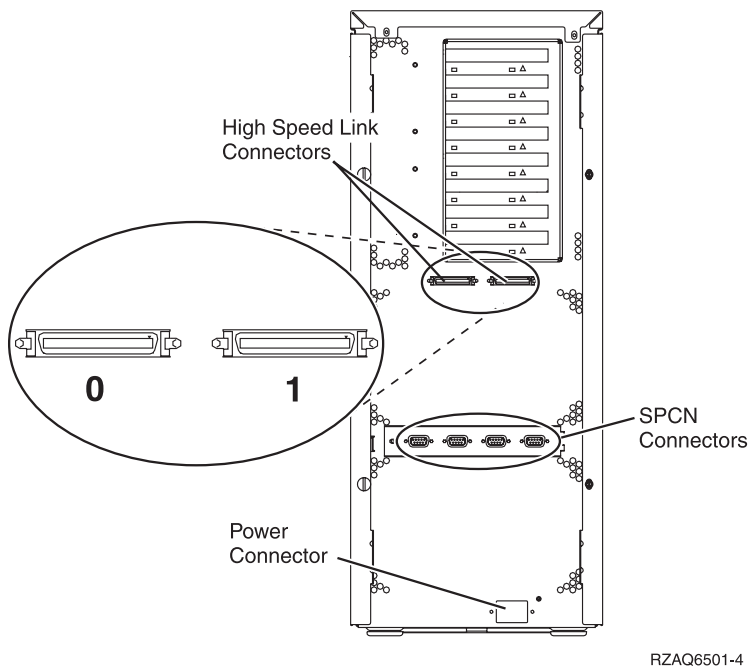


Figure 21. 5075 connector locations



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## 5078 or 0578 connector locations

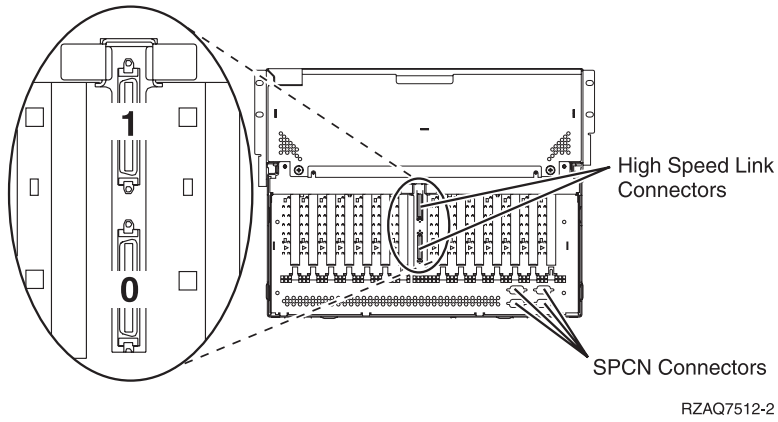


Figure 22. 5078 connector locations

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## 5088 or 0588 connector locations

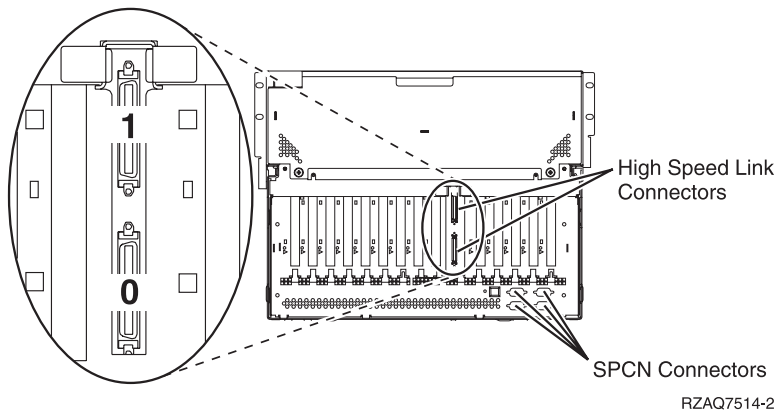
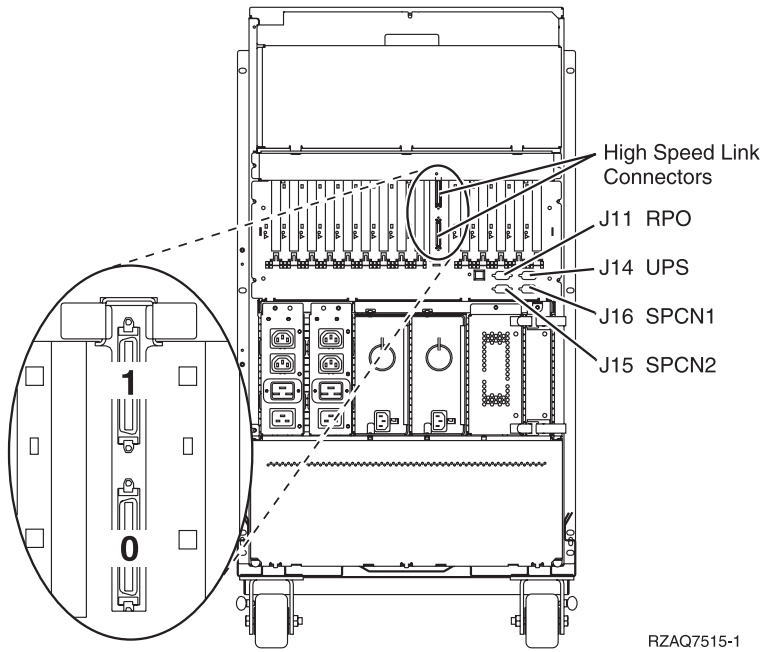


Figure 23. 5088 connector locations

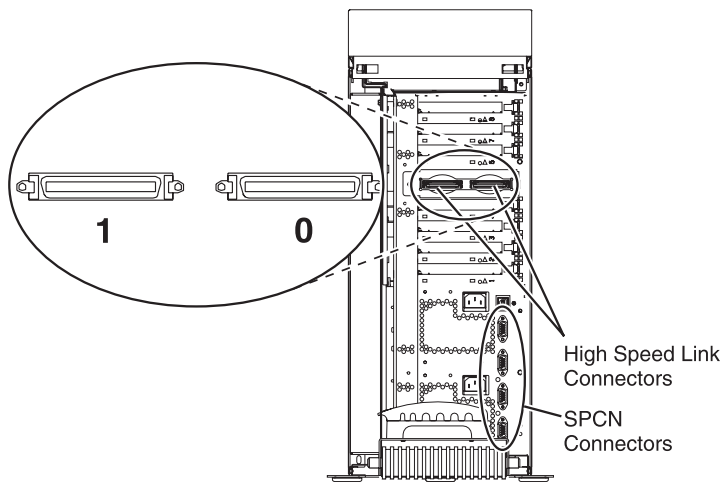
## 5094 connector locations



RZAQ7515-1

Figure 24. 5094 connector locations

## 5095 or 0595 connector locations



RZAQ7516-2

Figure 25. 5095 connector locations

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## 5294 connector locations

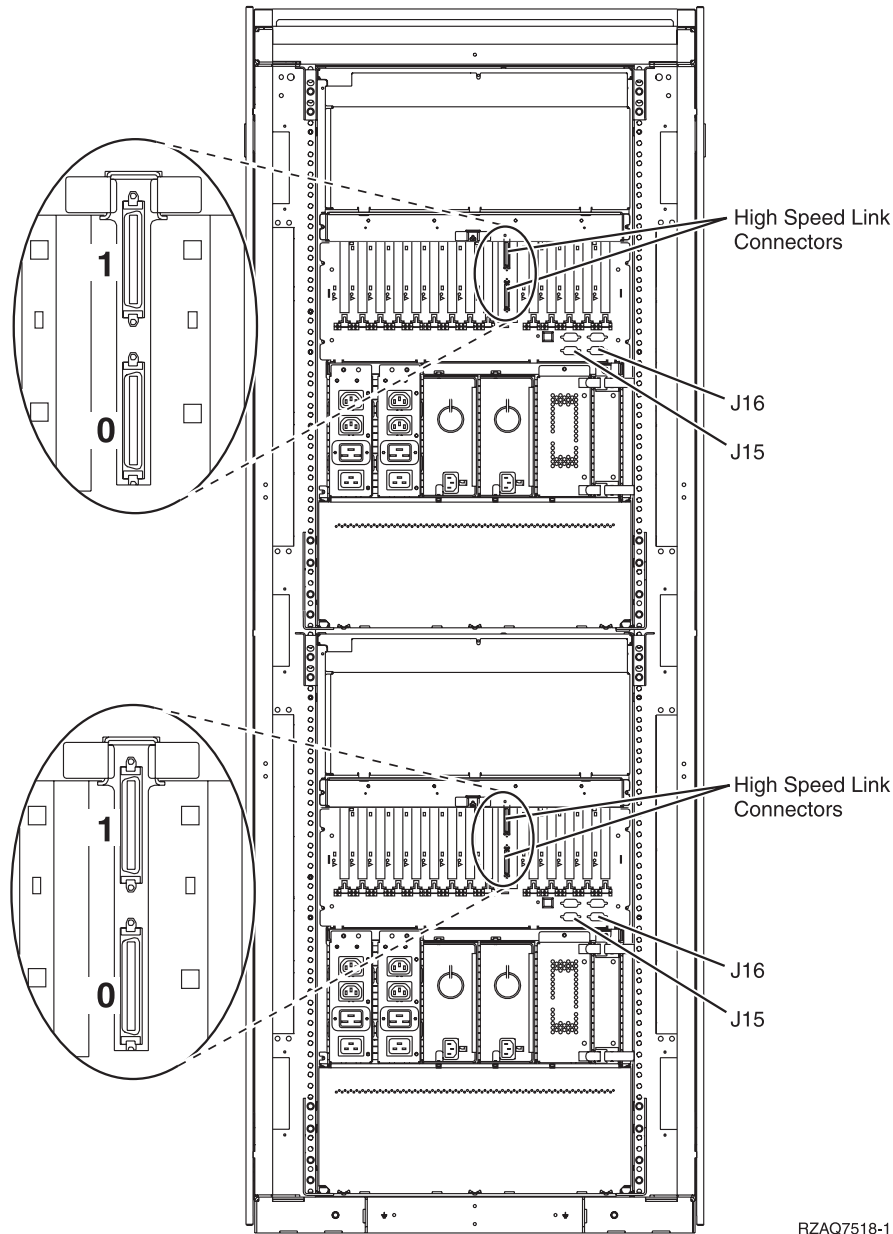


Figure 26. 5294 connector locations

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## 8079 connector locations

For the lower unit, refer to the 840 system unit and for the upper unit, refer to the 5074 expansion unit.

---

## 8093 connector locations

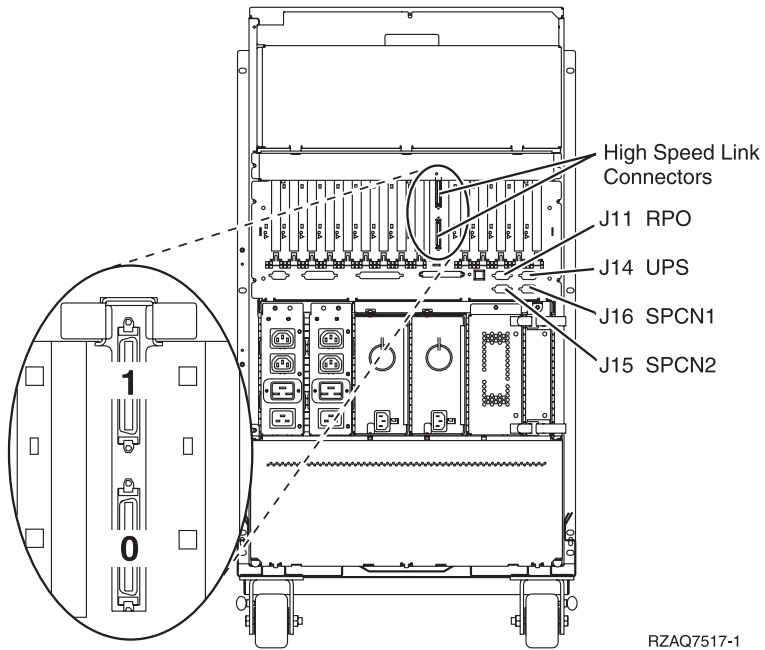
For the lower unit, refer to a 890 system unit and for the upper unit, refer to the 5074 expansion unit.

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## 8094 connector locations

For the lower unit, refer to a 890 system unit and for the upper unit, refer to the 5094 expansion unit.

## 9094 connector locations



RZAQ7517-1

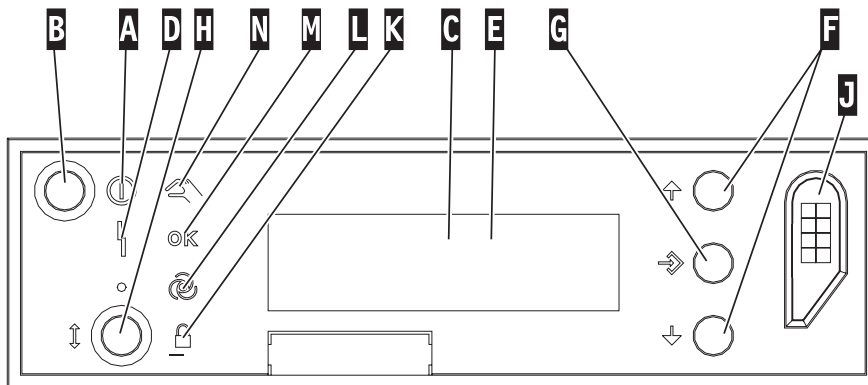
Figure 27. 9094 connector locations

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## Appendix C. System unit control panel

1. Go to the front of your system unit. Open the control panel door.
2. Before you can use **F** Increment/Decrement Buttons and **G** Enter Push button, you need to press **H** Mode Select to select manual mode **K**.

You will use the push buttons on the control panel. Familiarize yourself with the control panel on your unit.



RZACD507-1

- A** Power On Light
  - A blinking light indicates power to the unit.
  - A constant light indicates that the unit is up and working.
- B** Power Push button
- C** Processor Activity
- D** System Attention
- E** Function/Data Display
- F** Increment/Decrement Buttons
- G** Enter Push button
- H** Mode Select
- J** Electronic Keystick Slot
- K** Secure
- L** Auto
- M** Normal
- N** Manual



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